ADDITIONAL MATERIALS TOWARD A MONOGRAPH OF THE GENUS CALLICARPA. XVIII

Harold N. Moldenke

CALLICARPA L.

Additional & emended bibliography: Koord., Meded. Lands Plant. 12: [Plantkund. Woordenb.] 89 & 142. 1894; Domin, Bibl. Bot. 22 [89 (6)]: 1108--1109, text fig. 179. 1928; A. C. Martin, Am. Midl. Nat. 36: 608--609 & 650, pl. 50. 1946; Wyman, Shrubs & Vines Am. Gard. 113. 1956; Anon., Hortic. Abstr. 34: 747. 1964; El-Gazzar & Wats., New Phytol. 69: 457, 460, 469, 473, 483, & 485. 1970; Moldenke, Phytologia 21: 375--388 & 444--500. 1971.

Martin (1946) lists this genus among the genera studied by him whose seeds he ascertained to have endosperm, apparently basing his conclusion on the examination of only the seeds of C. americana. In a genus of 205 accepted specific and subspecific taxa, it would seem that results obtained from one species can hardly be regarded as providing a safe indication for the entire genus.

CALLICARPA ACUMINATA H.B.K.

Additional bibliography: Moldenke, Phytologia 21: 329, 341--344, 382, & 385. 1971.

CALLICARPA AMERICANA L.

Additional bibliography: Moldenke, Phytologia 21: 375 & 386. 1971.

Martin (1946) affirms that the seeds of this plant do possess endosperm.

CALLICARPA ANGUSTIFOLIA King & Gamble

Additional bibliography: Moldenke, Phytologia 21: 375. 1971.

Dop (1932) states that C. poilanei Dop is very closely related to C. angustifolia, differing in its almost glabrous (rather than villous) ovary, its elliptic-oblong (not lanceolate) leaf-blades which are acute (not long-attenuate) at the base, abruptly acuminate-caudate (not acutely attenuate) at the apex, and sinuate-denticulate or -dentate (not entire) along the margins, with the tomentum much finer on the lower surface.

CALLICARPA ARBOREA Roxb.

Additional & emended bibliography: Gamble, List Trees Darj. Dist. 60. 1878; E. D. Merr., Philip. Journ. Sci. Bot. 12: 298, 299, & 382. 1917; Moldenke, Phytologia 21: 375 & 387. 1971.

Gamble (1878) records the vernacular names "goehlo", "jamti", and "sung-a-kúng" for this plant and notes that the species grows at altitudes up to 3000 feet and is "Very common in old Mechi or Lepcha cultivations", flowering in April, fruiting in November; "Almost universal in the Terai, but most common in dry mixed for-

ests of small trees on good soil and in Savannahs. Bark grey-brown. Wood brownish white, of good grain, tolerably heavy; only used for charcoal."

It ought to be noted here that Clarke (1885) lists C. farinosa Roxb. as a synonym of C. arborea, but I am regarding it as belonging in the synonymy of C. tomentosa (L.) Murr.; the C. arborea Miq., which he lists, is also a synonym of C. tomentosa.

Merrill (1917) claims that C. weberi Merr. is most closely allied to C. arborea, but differs in its much smaller cymes which are usually only once or twice forked, its smaller and fewer-veined leaves, its larger flowers, and its ovaries being slightly glandular but not tomentose.

Fletcher (1938) records C. arborea from Thailand as follows: "C. arborea Roxb. var. villosa (Roxb.) King et Gamble Mat. 803 (1909); Ridl. F. M. P. 614, in nota. C. villosa Roxb. Hort. Beng. 10 (1814). C. lanata Lam Verb. 79, pro parte, non Linn. Payap. Doi Saket, North Plateau, c. 1000 m., Hosseus 618. Pannati. Pattani, Tomo, Ban Kaung, c. 90 m., Lakshnakara 838. Distrib. Malay Peninsula, Sylhet (type)."

CALLICARPA ARBOREA var. PSILOCALYX (H. J. Lam) Moldenke

Additional bibliography: Moldenke, Phytologia 21: 330, 336, & 387. 1971.

Merrill (1917) affirms that C. weberi Merr. is related to this plant, but differs in its smaller leaves, densely stellate-pubescent calyx, and puberulent corolla.

CALLICARPA AREOLATA Urb.

Additional & emended bibliography: J. A. Clark, Card Ind. Gen. Sp. Pl. 1925; Moldenke, Phytologia 16: 360 (1968) and 21: 376. 1971.

CALLICARPA AUSTRALIS Koidz.

Additional & emended bibliography: Ohwi, Fl. Jap. 764 & 997. 1965; Moldenke, Phytologia 20: 495 (1971) and 21: 44. 1971.

CALLICARPA BODINIERI Léveillé

Emended synonymy: Callicarpa longifolia Hemsl. apud Rehd. in C. S. Sarg., Pl. Wils. 3: 306, in syn. (in part). 1916 [not C. longifolia Benth., 1885, nor Hance, 1890, etc.].

CALLICARPA BODINIERI var. GIRALDII (Hesse) Rehd.

Additional bibliography: T. M. Simpson, Gard. South. Afr. 189. 1964; Moldenke, Phytologia 21: 331. 1971.

CALLICARPA BREVIPES (Benth.) Hance

Emended synonymy: Callicarpa longifolia Hook. apud P'ei, Mem. Sci. Soc. China 1 (3): 45, in syn. 1932 [not C. longifolia Benth., 1885, nor Hance, 1890, etc.].

Additional bibliography: Moldenke, Phytologia 21: 331, 333, 335, & 379. 1971.

CALLICARPA CANDICANS (Burm. f.) Hochr.
Additional & emended bibliography: Gamble, List Trees Darj. Dist. 60. 1878; Gamble, Man. Indian Timb., ed. 1, 283 & 503. 1881; Domin, Bibl. Bot. 22 [89 (6)]: 1108 & 1109, text fig. 179. 1928; Moldenke, Phytologia 21: 329, 331—332, 340, 344--346, & 387. 1971.
Gamble (1878) refers to this species as a "Common shrub along roadsides and in waste places" in the Darjeeling district of West Bengal.

CALLICARPA DICHOTOMA (Lour.) K. Koch
Additional bibliography: T. M. Simpson, Gard. South. Afr. 189. 1964; Moldenke, Phytologia 21: 331, 333, 335, 345, & 379. 1971.

CALLICARPA FLOCCOSA Urb.
Additional bibliography: J. A. Clark, Card Ind. Gen. Sp. Pl. 1925; Moldenke, Phytologia 15: 24. 1967.

CALLICARPA FULVA A. Rich.
Additional & emended bibliography: Hill & Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 21: 39. 1971.

CALLICARPA FULVOHIRSUTA Merr.
Additional bibliography: Moldenke, Phytologia 20: 495 (1971) and 21: 39 & 40. 1971.

CALLICARPA FURFURACEA Ridl.
Additional bibliography: Moldenke, Phytologia 14: 235 (1967) and 21: 230. 1971.

CALLICARPA GLANDULOSA Fletcher
Additional & emended bibliography: Hill & Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 14: 237. 1967.

CALLICARPA INTEGERRIMA Champ.
Additional bibliography: Moldenke, Phytologia 21: 38, 40, 50, 103, 215, 222, & 223. 1971.

CALLICARPA INTEGERRIMA var. SERRULATA Li
Additional bibliography: Moldenke, Phytologia 14: 246 (1967) and 21: 225. 1971.

CALLICARPA JAPONICA Thunb.
Additional bibliography: Wyman, Shrubs & Vines Am. Gard. 113. 1956; Moldenke, Phytologia 21: 334, 338, 340, 379, & 381. 1971.

CALLICARPA JAPONICA var. ANGUSTATA Rehd.
Emended synonymy: Callicarpa longifolia Hemsl. apud Rehd. in

C. S. Sarg., Pl. Wils. 3: 369, in syn. (in part). 1916 [not C. longifolia Benth., 1885, nor Hance, 1890, etc.].
Additional bibliography: Moldenke, Phytologia 21: 154, 210, 212, & 379. 1971.

CALLICARPA JAPONICA var. LUXURIANS Rehd.
Emended synonymy: Callicarpa longifolia "sensu Li" ex Hatusima, Mem. Fac. Agr. Kagoshima Univ. 5 (3): 47, in syn. 1966 [not C. longifolia Benth., 1885, nor Hance, 1890, etc.].
Additional bibliography: Moldenke, Phytologia 21: 334. 1971.

CALLICARPA KINABALUENSIS Bakh. & Heine
Additional bibliography: G. Taylor, Ind. Kew. Suppl. 12: 27. 1959; Moldenke, Phytologia 21: 46. 1971.

CALLICARPA KOCHIANA Mak.
Additional bibliography: Moldenke, Phytologia 21: 151, 154, 215, 223, 225, 242, & 344. 1971.

CALLICARPA LANCIFOLIA Millsp.
Additional bibliography: J. A. Clark, Card Ind. Gen. Sp. Pl. 1907; Moldenke, Phytologia 16: 451—452 (1968) and 21: 233 & 235. 1971.

CALLICARPA LONGIFOLIA Lam. [not C. longifolia Benth., 1885, etc.].
Additional & emended bibliography: Domin, Bibl. Bot. 22 [89 (6)]: 1109. 1928; Moldenke, Phytologia 21: 376 & 387. 1971.
It should be noted here that the homonym, C. longifolia Benth., cited by me in Phytologia 21: 49 (1971) as having first been published in 1962, was actually effectively published in 1885.

CALLICARPA LONGIFOLIA f. FLOCCOSA Schau.
Emended synonymy: Callicarpa longifolia L. ex Wall. in Roxb., Fl. Ind., ed. 1 [Carey & Wall.], 1: 409, in syn. 1820 [not C. longifolia Benth., 1885, etc.].
Additional bibliography: Moldenke, Phytologia 21: 376. 1971.
It should be noted here that the homonym, C. longifolia Benth., cited by me in the synonymy of this form in Phytologia 21: 113 (1971) as having first been published in 1966, was actually effectively published in 1885.

CALLICARPA LONGISSIMA (Hemsl.) Merr.
Emended synonymy: Callicarpa longifolia Benth. ex C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 570, in syn. 1885.
Additional bibliography: Moldenke, Phytologia 21: 376. 1971.

CALLICARPA MACROPHYLLA Vahl
Additional bibliography: El-Gazzar & Wats., New Phytol. 69: 483 & 485. 1970: Moldenke, Phytologia 21: 376 & 387. 1971.

CALLICARPA MAINGAYI King & Gamble

Additional bibliography: Moldenke, Phytologia 21: 329, 336, & 387. 1971.

Merrill (1917) asserts that C. weberi Merr. is allied to C. maingayi.

CALLICARPA PEDUNCULATA R. Br.

Additional bibliography: Patermann, Beitr. Zytol. Verbenac. 27--28 & [55], pl. 3, fig. 22. 1935; Moldenke in Fedde, Repert. Sp. Nov. 39: 302 & 304 (1936) and 40: 96, 99--102, 109, 120, 124, 130, & 163. 1936; Beer & Lam, Blumea 2: 222. 1936; Hand.-Mazz., Beih. Bot. Centralbl. 56B: 455. 1937; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Fletcher, Kew Bull. Misc. Inf. 1938: 414 & 415. 1938; Moldenke, Alph. List Common Vern. Names 33. 1939; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Cummins, Mycologia 32: 373. 1940; Moldenke, Suppl. List Common Vern. Names 3, 14, & 18. 1940; Moldenke, Prelim. Alph. List Invalid Names 9--13. 1940; Kaneh. & Hatus., Bot. Mag. Tokyo 56: 113. 1942; Lam & Meeuse in Holthuis & Lam, Blumea 5: 235. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 54--58, 61--71, & 87. 1942; Moldenke, Alph. List Invalid Names 8--11. 1942; Moldenke, Phytologia 2: 95. 1943; Moldenke, Alph. List Cit. 1: 34, 108, 109, 208, 248, & 254. 1946; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Phytologia 2: 345. 1947; Neal, In Gard. Hawaii, ed. 1, 640. 1948; Moldenke, Alph. List Cit. 2: 354, 359, 433, 456, 470, 482, & 565 (1948), 3: 702, 762, 764, & 795 (1949), and 4: 987, 1102, 1111, 1119, 1205, & 1208. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 125, 128, 131, 133, 135, 139, 141, 143, 144, 146--148, 150, 152, 155, 157, & 177. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 279, 282, 283, 286--287, 296, & 311. 1951; Moldenke, Phytologia 4: 122--124. 1952; Moldenke, Résumé 160, 165, 168, 172, 174, 179, 183, 187, 189, 191, 194, 197, 198, 200, 203, 204, 208, 211, 214, 242, 244--248, & 444. 1959; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Moldenke, Résumé Suppl. 3: 24 (1962), 7: 6 (1963), and 11: 6. 1964; A. L. Moldenke, Phytologia 10: 239. 1964; Neal, In Gard. Hawaii, new rev. ed., 726. 1965; Moldenke, Résumé Suppl. 14: 7. 1966; Whitmore, Guide Forests Brit. Solomon Isls. 170. 1966; Moldenke, Phytologia 13: 427, 437, 467, & 502 (1966), 14: 37, 105--108, 111, 113, 118, 121, 142, & 143 (1966), 14: 225 & 228--230 (1967), and 15: 19, 21, 27, & 32. 1967; Tingle, Check List Hong Kong Pl. 38. 1967; Moldenke, Résumé Suppl. 15: 17. 1967; Moldenke, Phytologia 16: 365. 1968; Stearn, Notes & Rec. Roy. Soc. Lond. 24: 83. 1969; A. L. Moldenke, Phytologia 18: 114. 1969; Moldenke, Phytologia 21: 38, 49, 101, 102, 108, 109, 151, 153, 157, 162--164, 215, 220, 222, 223, 235, 236, 242, 336, 346, & 387--388. 1971.

Illustrations: Britten in Banks & Soland., Illustr. Austral. Pl. [Bot. Cook's Voy. 2:] pl. 237. 1901; Patermann, Beitr. Zytol. Verbenac. pl. 3, fig. 22. 1935.

Recent authors and collectors describe this plant as a large

slender bush, shrub, or small tree, 1--10 m. tall, the stems 2 cm. in diameter, the leaf-blades gray-green and softly pubescent or bright-green above and light-green beneath, the flower-buds lilac, the flowers fragrant, calyx pale- or light-green, corolla pink, pinkish-purple, or pale-purple to lavender, orchid, light-violet, mauve, or even white, the petals 4 and minute, filaments deep-purple or light-violet to mauve, anthers yellow or light-yellow, and the fruit green when immature, eventually purple, bright-purple, pale- or deep-lilac, or violet, not white. They have found it flowering from April to July, October, and November and fruiting in January, July, and September to November, growing from sealevel to 700 meters altitude, inhabiting forests, the margins of rainforests, the edge of woods, base of cliffs, and cultivated ground, growing on limestone near riverbanks, in alang-alang (Carangium odoratum) fields, in grass savannas of low-lying areas, and in the tracks in grasslands. Beer & Lam (1936) report it as "common in forest regrowths", Mrs. Clemens describes it as a "shrub in rocks with Rapanea and Glochidion", while Brass calls it "sporadic in secondary grassland" on Fergusson Island.

The corollas are described as "lavender" on F. R. Fosberg 14204 and G. P. Wilder s.n. [Nov. 28, 1930], "pink" on Brass 27347, M. K. Clemens s.n. [Mount Coolum, 3 April 1945], and P. Rankin s.n. [Jan. 3, 1945], "orchid" on Sigafoos 136, "mauve" on Kajewski 1361, "pale-lilac" on C. B. Robinson 300, "pale-purple" on Hoogland 4246, "pinkish-purple" on Womersley & Floyd 6806, and "white" on C. B. Robinson 299.

It is worth noting here that the C. cana of Dalzell & Gibson is actually C. tomentosa (L.) Murr., that of Gamble is C. macrophylla Vahl, that of Wallich is in part C. longifolia Lam., and that of Linnaeus, of Sprengel, and of Vahl is C. candicans (Burm. f.) Hochr.; the C. cuspidata credited to Lam & Bakhuizen van den Brink is C. longipes Dunn, that credited to Bakhuizen alone is in part C. longipes and in part C. rubella Lindl., and that credited to Hasskarl is C. longifolia Lam.; the C. dentata credited to Roxburgh is C. candicans (Burm. f.) Hochr. while that of Pavon and of Sessé & Mociño are Cornutia grandifolia (Schlecht. & Cham.) Schau.; and the C. lanata of Gamble is C. vestita Wall., that of Linnaeus and of Wallich is C. tomentosa (L.) Murr., that of Hosséus is C. arborea Roxb., that of H. J. Lam is C. arborea var. psilocalyx (H. J. Lam) Moldenke, and that of Lamarck is Premna odorata Blanco.

Hasskarl's reference (1844), given in the above bibliography, is often cited as "Cat. Pl. Bot. Bogor. Cult. 2: 136--137" or as "2° Cat. Buitenz."

The Sprengel (1825) reference is incorrectly cited by Hasskarl (1844) as "2: 420". The Lam & Meeuse reference (1942) also cited above is sometimes cited as "1945" or "1946", but actually

bears the inscription "issued June 15th, 1942". These authors cite a no. 3429 from Nenoesa in the Talaud Islands, describing the plant as about 1 m. tall, leaves bright-green above, light-green beneath, calyx light-green, corolla light-violet, and anthers yellow, growing in cultivated ground, at 100 meters altitude, flowering in June. They give the overall distribution of the species as "Malay Peninsula to Australia".

Brown's original (1810) description of C. pedunculata is "foliis ovatis acutis dentato-serratis basi obtusissimâ: adultis suprà scabris subtùs cinereo-tomentosis, pedunculo petiolum paulo superante. (T.) v.v." The original description of C. cuspidata by Wallich (1820) is "Shrubby, all the tender parts, and the under surface of the short-petioled, elliptic, dentate, cuspidate. Leaves woolly. Corymbs axillary, their division and the calyces clothed with minute grains under the wool. A native of the Moluccas; the leaves are always acutely dentate, and end in a long taper, acute point. The Berries are very small, smooth and purple." The fruits, of course, are drupes, not berries.

The original description of C. lanata by Vahl (1794) is as follows: "Callicarpa lanata foliis ovatis basi rotundatis integerrimis subdenticulatis, supra rugosis subtus ramisque lanato-tomentosis. Tomex tomentosa. LIN. fl. Zeyl. pag. 24. fide herb. Hermanni. Callicarpa lanata (tomentosa S. V. p. 153) foliis integerrimis lanatis. LIN. Mant. p. 331. Rami, uti petioli, folia subtus e pedunculi, tomento densissimo tecti. Folia ovata, attenuata, 4--5 pollicaria, basi pollices tres lata, nervis supra villosis incanis, rugosa, integerrima vel extrorsum dentibus obscure dentata: dentibus acutis. Inflorescentia ut in reliquis." Obviously it is C. tomentosa (L.) Murr. which he is here describing.

As to the overall geographic distribution of the true C. pedunculata, Beer & Lam (1936) say "Formosa, Philippines, East Malaysia to Polynesia", King & Gamble (1908) say "Malay Archipelago, Tropical Australia", Domin (1928) says "Von Penang über Malaya nach Australien (Nord-Australien, Queensland, nördl. N. S. Wales", Lam (1914) gives it as "P. Pinang; Java; Celebes; Ambon; Key-Insl.; Niederl. Neu Guinea; Kais. Wilh. Land; Neu-Mecklenberg; New-Pommern; Uatom; trop. Australien", while in his 1924 work he modifies this to "Penang, Malayischer Archipel, Bismarck-Archipel, tropisches Australien", Lam & Meeuse (1942) give it as "Malay Peninsula to Australia" and record it from Nanoesa Island on the basis of their no. 3429, while Kanehira & Hatusima (1942) say "Philippines, East Malaya to New Guinea and Polynesia". Bentham & Mueller (1870) comment that "The species is also in the Archipelago and is closely allied to the widely diffused C. Macrophylla, Vahl. Schauer refers it to 'C. lanata Vahl Symb. iii. 13', but if he had turned to the page he quotes, he would have seen that the name is Linnaeus' not Vahl's and relates to the very different Ceylon species which Schauer has published under the name C. Wallichiana."

Lam (1919) includes a C. dentata Wall., in part, no. 6319, in the synonymy of C. pedunculata, but I regard this binomial as belonging to the synonymy of C. longifolia Lam. He gives the distribution of C. pedunculata as "P. Penang, Malay Archipelago (Java!, Celebes!, Wetar!, Ambon!, Key-isl.!, Dutch-New-Guinea!, Kais.-W.-land), Bismark-archipelago!, tropical Australia". He comments that "Its affinities are with C. rubella, C. pilosissima Max. (from Formosa), C. caudata and C. macrophylla. The leaves, however, never have a distinctly cordate base, as in C. rubella, are never as narrow as in C. pilosissima, have never an acute or cuneate base as in C. caudata, nor are as long and wide as the leaves of C. macrophylla, which are coarsely dentate and have their greatest breadth near the base." In discussing C. rubella he says "Its affinity is, especially in regard with the flower, with C. pedunculata, but its leaves are always cordate, subsessile and narrower, whilst its cymes are smaller, fasciculate, not widely dichotomous as in C. pedunculata."

Interestingly enough, Steudel (1821) notes "cfr. Callicarpa dentata" in his entry for C. pedunculata, while in his 1840 work he actually includes a C. lanata "Linn." in the synonymy on the authority of Sprengel. The Schultes (1827) ask "videtur eadem, ac lanata. Quid Callicarpa macrocarpa Raeusch.? — sinensis Noisette?" The last two names referred to in this quotation are actually synonyms of C. candicans (Burm. f.) Hochr.

Britten (1901) reduces C. lanata "Schauer (non Vahl)" to synonymy under C. pedunculata; Rehder (1914) also gives "C. lanata, Schau., not Linn." as a synonym, while Jacques & Hérincq (1851) adopt C. lanata "Vahl" as the accepted name for the taxon, reducing C. pedunculata R. Br. to synonymy under it.

Ridley (1923) includes C. pedunculata only under "Excluded Species" for the Malay Peninsula, commenting that the "Wallich, 1834, no. 2" cited by Gamble is "Hamilton, 1834" from Penang, but actually represents what is now called C. candicans (Burm. f.) Hochr. He states categorically that "There is no evidence for Callicarpa pedunculata occurring in the [Malay] Peninsula".

It should also be noted here that C. B. Robinson 300, from Amboina, was at first regarded by Merrill and others as representing the Mamanira alba of Rumphius (1743), but the latter is now regarded by me as belonging to the synonymy of Callicarpa longifolia Lam. Stapf, however, in 1929 still cites Rumphius' pl. 59 as illustrating "C. cuspidata".

Sprengel (1825) places C. pedunculata in the synonymy of what he calls C. lanata L. [now known as C. tomentosa (L.) Murr.] along with C. dentata Roth and C. incana Roxb. [the latter now regarded as C. macrophylla Vahl]. He regarded C. cuspidata Roxb. as a distinct species from C. pedunculata, this being quite under-

standable if C. pedunculata is regarded as a synonym of C. tomentosa. Bakhuizen van den Brink (1921) also kept C. pedunculata and C. cuspidata apart as separate species. In the synonymy of the former he placed C. americana Blanco, C. bicolor F. Vill., C. blancoi Rolfe, C. formosana Rolfe, C. ovata C. B. Robinson, and C. stenophylla Merr. -- actually, C. formosana and C. stenophylla are valid species [albeit the former is very close to C. pedunculata] and the other binomials he cites are all synonyms of C. formosana Rolfe. Under "C. cuspidata Roxb." he places, as synonyms (almost unbelievably!) C. acutidens Schau., C. caudata Maxim., C. lancifolia Merr., C. longipes Dunn, C. micrantha Vidal, C. pilosissima Maxim., C. psilocalyx C. B. Clarke, C. rubella Lindl., C. sessilifolia Wall., C. tenuiflora Champ., and Mamanira Rumph.! Of these, C. acutidens, C. caudata, C. longipes, C. micrantha, C. pilosissima, C. psilocalyx, and C. rubella are all valid and distinct species, while C. lancifolia Merr. is a synonym of C. merrillii Moldenke, C. sessilifolia Wall. and C. tenuiflora Champ. are synonyms of C. rubella Lindl., and Mamanira alba Rumph. is C. longifolia Lam. Because of this amazingly broad concept of the species in question, his description and his statement of geographic distribution are useless. He comments under what he calls C. lanata Zipp. "Perhaps this species is identical with C. cana or C. cuspidata Roxb." -- I regard it as C. pedunculata R. Br.

Chang (1951) includes under C. pedunculata the C. formosana of Rolfe, the C. aspera of Handel-Mazzetti, and the C. rubella f. robusta of P'ei. I follow Merrill in regarding C. formosana as valid, with C. aspera as a synonym, and also accept C. rubella f. robusta as valid. Obviously, however, C. pedunculata is very closely allied to C. formosana. The latter may actually be only a variety of the former or they may even be the same taxon as Bakhuizen (1921), Chang (1951), and others maintain.

Vernacular names recorded for C. pedunculata are "a cibulit", "a peptipinagut", "beauty-berry", "bĕning-bĕning rih", "mĕniran", "katoempang", "mĕmĕniran", "ringan", "ringan-ringan", and "wild heliotrope".

Kajewski tells us that on Guadalcanal island when a small baby in arms is sick the fruit of this plant is chewed with a betel nut and spat into the baby's mouth. N. E. Brown (1890) informs us that the species was introduced into cultivation in 1788 from the East Indies. According to Cummins (1940) it is attacked by the fungus, Uredo callicarpae Petch, as can be seen on herbarium specimens of Clemens & Clemens 1368, 1452, & 1453 from Papua. The Herb. Prager 18667 from New Britain was erroneously labeled by someone as from "New England"

Bentham & Mueller (1870) cite Beckler s.n. and C. Moore s.n.

from New South Wales, R. Brown s.n. from the Northumberland Islands, and A. Cunningham s.n., Dallachy s.n., W. Hill s.n., F. Mueller s.n., "and others" from Queensland. King & Gamble (1908) cite Wallich 1834 (2) & 6319. Bakhuizen van den Brink (1921) cites Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 44601] as C. cuspidata Roxb., but it is very plainly typical C. merrillii Moldenke. Lam (1924) cites Lauterbach 2449 and Rudolph 6 from the Territory of New Guinea, Lauterbach 207 and Dahl s.n. [30 Okt. 1896] from New Britain, and Peekel 61 from New Ireland. Domin (1928) cites A. Dietrich 409, 1341, 1342, 1453, 1762, 2525, 2534, & 2610 and Domin s.n. [Tambourine Mts., III.1910] & s.n. [Yabarra, I.1910] from Queensland. Kanehira & Hatusima (1942) cite their nos. 13539, 13633, & 13975 from the Arfak Mountains of West Irian, at 1900 meters altitude. Whitmore (1966) cites Rechinger 4672 & 4856 from the Solomon Islands.

Chang (1951) cites the following collections, but since he includes C. formosana Rolfe and C. rubella f. robusta P'ei in his concept of C. pedunculata, these citations are wholly unreliable and I seriously doubt if any of them actually represent the true C. pedunculata: CHINA: Chekiang: nos. 1838, 14128, & 43949. Fukien: S. T. Dunn s.n. and nos. 37, 97, 264, 312, 435, 727, 1204, 2677, & 3021. Kiangsi: nos. 3924, 4469, & 20874. Kwangsi: nos. 4209, 8755, 21989, 22982, 23820, 24642, 26530, & 26548. Kwangtung: Tse Hai 413, T. M. Tsui 119, 211, & 613, Tutcher s.n., and nos. 48, 347, 650, 696, 1031, 1032, 1342, 1438, 1663, 2047, 2158, 2434, 2821, 3592, 4874, 4960, 5147, 5707, 5715, 7555, 9804, 10799, 12008, 20315, 20496, 21152, 21388, 21460, 21586, 23993, 24455, 25228, 25344, 25596, 25924, 26381, 26410, 28715, 29947, 32250, 40774, 40911, 42765, 50349, 60577, 61256, 80628, & 84356. HAINAN: nos. 96, 850, 2706, 5002, 5801, 6029, 23688, 25696, 27690, & 44757. FORMOSA: K. Mori s.n., G. Saito 7657, Y. Shimada s.n., T. Tanaka s.n., and nos. 10988, 72750, 75765, 92772, & 151891. Unfortunately, Chang gives the collector and/or herbarium names corresponding to the above numbers only in Chinese characters and I have not as yet been able to have these translated.

Material of C. pedunculata has been misidentified and distributed in herbaria under the names C. acuminata Roxb., C. americana Hort., "C. cana L. sens. lat.", C. japonica Thunb., C. longifolia Lam., and C. villosa Vahl. On the other hand, the D. Fairchild 1015, Koorders 29459b [339*], and Ouwenhand 56, distributed as C. pedunculata, are actually C. brevipetiolata Merr.; Beguin 1214, Bloembergen 4431, Brass 5520, Docters van Leeuwen 10106, Giulianetti s.n., Koorders 19485b & 19498b [448], Main & Aden 947, Mayr 104, Mearns & Hutchinson 4755, E. D. Merrill 11689, Ramos & Edaño

s.n. [Herb. Philip. Bur. Sci. 40505], C. B. Robinson 299, Teijsmann 8942, and Walsh 467 are C. caudata Maxim.; Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 45614] is C. elegans Hayek; Ahern 811Q and Hosokawa 9905 are C. formosana Rolfe; E. D. Merrill 1718 is C. formosana f. angustata Moldenke; Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 28513] is C. formosana var. glabrescens Moldenke; Clemens & Clemens 1416 is C. longifolia Lam.; Zollinger 350 is C. mollis Sieb. & Zucc.; F. R. Fosberg 14204, Kostermans 2609, and C. B. Robinson 300 are C. pedunculata var. glabriuscula H. J. Lam; Kjellberg 3889 and Rachmat 206 are C. pilosissima Maxim.; Weiss 1586 is C. rubella var. hemsleyana Diels; and Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 37635] is C. stenophylla Merr.

The Hort. Huber 725, cited below, was previously erroneously cited by me as C. longifolia Lam. The Guadalcanal specimens, also cited below, do not have the aspect of C. pedunculata and may, on further study, prove to represent something else. Herb. Hort. Bot. Bogor. XV.J.A.XXIX.6 is a mixture of C. pedunculata and its var. glabriuscula H. J. Lam.

In all, 147 herbarium specimens and 6 mounted illustrations of the typical form of this species have been examined by me.

Additional citations: INDIA: State undetermined: J. D. Hooker 19 (S); Roxburgh s.n. (S); T. Thomson s.n. [Plan. Ganget. inf.] (S). MALAYA: Pahang: Corner 29837 (Bz--72765). Penang: Wallich 1834/1 (K). GREATER SUNDA ISLANDS: Anambas: M. R. Henderson 20491 (Bz--18014). Java: Bakhuizen van den Brink 806 (Bz--25477); Teijsmann s.n. [1868] (Mi). Nanoesa: H. J. Lam 3429 (Bz--17539, Bz--17540). Sumatra: Bünnemeijer 47 (Bz--17980). LESSER SUNDA ISLANDS: Timor: Forbes 3465 (Bz--18112), 3601 (Bz--18113); Herb. Torrey s.n. (T); Walsh 111 (Bz--17494, Bz--17495). MOLUCCA ISLANDS: Amboina: Boerlage 9 (Bz--18116, Bz--18117), 227 (Bz--18115); Rant 88 (Bz--18119), 96 (Bz--18114); C. B. Robinson 299 (W--654617, W--1294194). Banda: Treub 391 (Bz--18122). Boano: Kornassi 1285 (Bz--18123, Ca--236814, Ut--80239). Buru: Sapin 470 (Bz--18124). Elat: H. Jensen 143 (Bi, Bz--18126). Halmahera: Anang 592 (Bz--72983); H. J. Lam 3761 (Bz--18128, N); Teijsmann 7787 (Bz--17500, Bz--17501). Ternate: Beguin 1229 (Bz--17503). Timor Laoet: Buwalda 4362 (Bz--72567). Toeal: H. Jensen 33 (Bi, Bz--18125). NEW GUINEA: Papua: Chalmers s.n. [Lome Rg.] (Mb), s.n. [South Cape] (Mb), s.n. (Mb); Clemens & Clemens 1368 (Ah), 1453 (Ah), 3264a (Ah), s.n. [Suppl., July 16/36] (Ah); Hollrung 546, in part (Bz--18129, Mb); Hoogland 4246 (Ng--16830); Mac Gregor s.n. [1890] (Mb). Territory of New Guinea: Hollrung 546, in part (Mb); Womersley & Floyd 6806 (Bi, Ng--16936). West Irian: Sigafoos 136 (Mi, W--1942841). NEW GUINEAN ISLANDS: Fergusson:

Brass 27347 (W—2408591). BISMARK ARCHIPELAGO: New Britain: Herb. Prager 18667 (Gg—31965); R. Parkinson s.n. [1901] (Vt). SOLOMON ISLANDS: Guadalcanal: Kajewski 2420 (Bi, Bz—18160, Bz—18161). AUSTRALIA: New South Wales: Boorman s.n. [Mt. Perry, 8.1912] (Ca—176563); W. Forsyth 10-98 (Ca—25096); Herb. Forest Dept. Sydney 485 [2209] (Na—16271); Maiden & Boorman s.n. [Byron Bay, 11-03] (Po—64807, Vt); E. G. McLean 54 (W—1092061), s.n. [Casino, 4-18] (W—1596134); "N. B." 176 [Richmond River] (Go). Queensland: F. M. Bailey s.n. (W—73329); Boorman s.n. [8.1912] (B); Brass 2356 (B, Bi); M. K. Clemens s.n. [Sept. 21, '43] (Or—47686, Or—47952), s.n. [Mount Coolum, 3 April 1945] (Ca—81172, Mi), s.n. [August-October 1947] (N, S), s.n. [Dalrymple Heights, Oct./Nov. 1947] (Mi); A. Cunningham 82 (N); A. Fielding 13059 (Go); Flecker 14095 (N); Herb. Bogor. 17561 (Bz), 18164 (Bz), 18165 (Bz); Herb. Mus. Nac. Hist. Nat. Chile 25556 (Sg); Kajewski 1361 (W—1550862), 1405 (S); Michael 309 (Bz—18163); C. T. White 1361 (N, S, S), 1405 (N, S), 1957 (Bz—18162), 8981 (N, N). GREAT BARRIER REEF: Lizard: Collector undetermined 48 (S). CULTIVATED: France: Hort. Huber 725 (M, Z—photo). Hawaiian Islands: A. Forbes 21 (Bi); Judd, Bryan, & Neal s.n. [June 6, 1932] (Bi); P. Rankin s.n. [Jan. 3, 1945] (Bi); G. P. Wilder s.n. [Nov. 28, 1930] (Bi). India: Herb. Hort. Bot. Calcutt. s.n. (Bz—18158, Bz—18159, Mu—1160, N—photo, T, T, X, Z—photo). Java: Groot Keij 2288 (Bz—18127); H. Hallier C.122 (X); Herb. Hort. Bot. Bogor. XI.G.48a (Bz, Bz), XI.G.48 en a (Bz—25727, Bz, Bz), XI.G.49a (Bz, Bz, Bz, N, N), XI.G.92 (Bz—18110, Bz—25796, Bz, Bz), XI.G.92a (Bz—18111), XV.F.30 (Bz—26344, Bz, Le, N), XV.F.30a (Bz—26345), XV.J.A.XXIX.6, in part (Bz—25729, Bz, Bz, Bz, N), XV.J.A.XXIX.7 (Bz—18120, Bz—18121), s.n. [Banda] (Bz—18108), s.n. (Bz—18106, Bz—18107, Bz—18109, Bz—25728). LOCALITY OF COLLECTION UNDETERMINED: Herb. Bogor. 18105 (Bz). MOUNTED ILLUSTRATIONS: Ferd. Bauer, Icon. Nov. Holl. 965 (V), 965a (V).

CALLICARPA PEDUNCULATA var. GLABRIUSCULA H. J. Lam in H. Hallier, Meded. Rijksherb. Leiden 37: 33—34. 1914.

Synonymy: Callicarpa novoguineensis Loes. ex H. J. Lam, Verbenac. Mal. Arch. 57, in syn. 1919.

Bibliography: H. J. Lam in H. Hallier, Meded. Rijksherb. Leiden 37: 33—34. 1914; H. J.Lam, Verbenac. Mal. Arch. 57. 1919; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Kaneh. & Hatus., Bot. Mag. Tokyo 56: 113. 1942; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Résumé 245 & 246. 1959.

Lam's original (1914) description of this variety is "Folia supra sparse pubescentia (pilis simplicibus), subtus laxe stellato-puberula, glanduloso-punctata, utrinque in nervis densius vestita; flos calyce extus laxiuscule puberulo" and bases the taxon on El-

bert 4503 & 4631 from "Wetar, Hochfläche von Mangowe bei Laswerang, 600—800 m." In his 1919 work he modified the description to read "foliis supra pilis simplicibus sparsis, subtus pilis stellatus sparsis tecta, glandulosa; nervis utrinque densius pilosis; calyx minus dense pubescente," and cites three collections: (1) Blume? s.n. from Java, deposited in the Rijksherbarium at Leiden as sheet number 908265-1115, (2) H. Hallier C.121 from Key Island "imported into Buitenzorg and cultivated there sub signo XI.G.49", and (3) Elbert 4503 from Mangowe, near Saiwerang, Wetar, altitude 600—800 meters, collected February 19, 1910. He comments that "This variety has an affinity with C. macrophylla, with which some authors confound the species, by the form of its leaves, especially in regard with the base." Kanehira & Hatusima (1942) cite Brass 13356 & 14133 from New Guinea. This collector found the plant growing in dense rainforests at 50 meters altitude, flowering in July.

Some of the Herb. Hort. Bot. Bogor. XI.G.49 specimens examined by me do not differ appreciably from typical C. pedunculata, and probably actually represent XI.G.49a. Many sheets conprise both collections together and are inscribed "XI.G.49 en a".

In all, 16 herbarium specimens have been examined by me.

Citations: MOLUCCA ISLANDS: Amboina: C. B. Robinson 300 (Bz—18118, N, W—654618). NEW GUINEA: West Irian: Kostermans 2609 (Bz—26605, Bz, Bz, N). CULTIVATED: Hawaiian Islands: F. R. Fosberg 14204 (Bi, N, N). Java: H. Hallier C.121 (X); Herb. Hort. Bot. Bogor. XI.G.49 (Bz—25730, Bz—26521, Bz, N), XV.J.A. XXIX.6, in part (N).

CALLICARPA PEDUNCULATA var. GLANDULOSA H. J. Lam, Verbenac. Mal. Arch. 57. 1919.

Bibliography: H. J. Lam, Verbenac. Mal. Arch. 57. 1919; H. J. Lam in Engl., Bot. Jahrb. 59: 88. 1924; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Résumé 246. 1959.

Lam's original (1919) description of this variety is "folia angustiora, basi angustiori, latitudine majore supra medium, dentibus marginibus minutioribus; calyx pilis longis glanduliferis vestitus." He based the variety on two cotype collections: (1) Forsten s.n. from Tondano, Celebes, collected in May 1840, and deposited in the Rijksherbarium at Leiden as sheets number 908266-1226 & 908266-1227, and (2) Hollrung 210 from Sattel Mountain near Finschhafen, West Irian, collected in July 1886, and probably also deposited in the Leiden herbarium. In his 1924 work he cites only Hollrung 210. The plant has been collected in flower and fruit in May and July. As yet I have seen no material of it. In previous publications I regarded the variety as invalid, but it seems to me now that the characters given for it by Lam render it sufficiently distinct to be worthy of nomenclatural designation.

CALLICARPA PEDUNCULATA var. PSILOCALYX H. J. Lam, Verbenac. Mal. Arch. 57--58. 1919.

Bibliography: H. J. Lam, Verbenac. Mal. Arch. 57--58. 1919; H. J. Lam in Engl., Bot. Jahrb. 59: 88. 1924; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Résumé 246. 1959.

Lam's original (1919) description of this taxon is "calyx glaber vel margine singulis pilis suffultus, eglandulosus". He bases it on four cotype collections, all from West Irian and probably all deposited in the Rijksherbarium at Leiden: (1) Nyman 580 from Saedel-Mountain, altitude 750 m., collected in July 1899, (2) Schultze 194 from Augusta River, collected in January 1913, (3) Schultze s.n. from near Sepik River, collected on January 26, 1910, and (4) Schlechter 16731 from woods in the Hami Mountains, at about 800 m. altitude, collected on October 27, 1907. In his 1924 work Lam cites the same four collections and no others. The plant has been collected in anthesis in January and July and in fruit in July and October. As yet I have seen no material of it and in previous publications did not recognize its validity.

CALLICARPA PETELOTII Dop, Bull. Soc. Hist. Nat. Toulouse 64: 510. 1932.

Bibliography: P. Dop, Bull. Soc. Hist. Nat. Toulouse 64: 499--501 & 510--512. 1932; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 59 & 87. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 76. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 136 & 177. 1949; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Moldenke, Résumé 175 & 444. 1959; Moldenke, Phytologia 21: 331, 333, & 335. 1971.

Dop (1932) describes this species as "Frutex 5--6 m. altus. Ramuli subquadrangulares, glabri sed abundanter glandulosi. Folia papyracea, lanceolata, basi acuta et longe attenuata, apice acuta et longe acuminato-caudata, utrinque glabra et copiose glandulosa, supra brunnea et subtus viridia in sicco, 13--18 cm. longa x 3--4.5 cm. lata; nervus subtus prominens; costae 22--24 tenues, prominentes, ascendentes et regulariter recurvatae ad margines; venae paralleles; reticulationes paullo conspicuae; petiola gracilia, glandulosa paullo alata, 1--2.5 cm. longa; linea interpetiolare conjuncta. Inflorescentiae; cymae puberulae, dichotomae, multiflorae 2 cm. longae x 3 cm. latae; bracteae subulatae; pedunculi 10--12 mm. longi; pedicelli 2 mm. longi....flores ignoti.... Fructus: drupa minima, glabra sed glandulosa, calyce truncato glabro, glanduloso, in dimidia parte cincta, 1 mm. lata."

The species is based on Pételot 3898 and 3916, both collected in open forests, at 1100 meters altitude, in the Massif de Tam Dao, Tonkin, Indochina. Dop (1932) comments that "Cette espèce insuffisamment connue, e st remarquable par l'estrême adondance de ses glandes. Par la forme des feuilles, la dimension et la disposition des cymes, elle se rapproche du C. longifolia. Par contre, son ovaire glabre, ses rameaux et ses feuilles glabres ponc-

tués de tres nombreuses glandes la rapprochent des C. dichotoma et C. brevipes. Peut être est-ce une espèce formée par hybridation, le caractère de l'ovaire glabre étant un caractère dominant"!

The plant has been collected in fruit in November.

In all, 7 herbarium specimens, including both cotype collections, and 2 mounted photographs have been examined by me.

Citations: INDOCHINA: Tonkin: Pételot 3898 (N—cotype, W—1717034--cotype), 3916 (Bz—18593—cotype, It—cotype, N—cotype, N--photo of cotype, W--1759303—cotype, Z—photo of cotype), 6726 (N).

CALLICARPA PHANEROPHLEBIA Merr., Philip. Journ. Sci. Bot. 12: 301. 1917.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 12: 301 & 382. 1917; E. D. Merr., Enum. Philip. Flow. Pl. 3: 387. 1923; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87 (1942) and [ed. 2], 141 & 177. 1949; Moldenke, Résumé 183 & 444. 1959; Moldenke, Phytologia 15: 21. 1967; Moldenke, Résumé Suppl. 15: 11. 1967; Moldenke, Phytologia 21: 152 & 334. 1971.

A shrub, about 2 m. tall, the younger parts distinctly stellate-tomentose with pale-brownish hairs, the older parts glabrous; branches terete, brownish, glabrous; branchlets very slender, the younger parts densely stellate-tomentose; leaves decussate-opposite; petioles about 3 mm. long, stellate-tomentose; leaf-blades chartaceous, olivaceous above, brownish-olivaceous beneath (in drying), lanceolate to oblong-lanceolate, 11—15 cm. long, 2—4 cm. wide, narrowed upwards to the very slender caudate-acuminate apex (the acumen itself 1—2 cm. long), prominently dentate-serrate along the margins with somewhat apiculate teeth, obtuse at the base, somewhat shiny and glabrous above or with the midrib somewhat stellate-tomentose, shiny and with very numerous shiny glands in minute pits beneath, with the midrib and sometimes the secondaries stellate-tomentose; secondaries about 7 per side, very prominent, arcuate-ascending, anastomosing; vein and veinlet reticulation lax, prominent; cymes axillary, solitary, few-flowered, very lax, to 6 cm. long and wide, dichotomously branched, more or less stellate-tomentose; peduncles about 2 cm. long; pedicels about 0.5 mm. long, "jointed to the branchlets" (according to Merrill); bractlets linear, 1--1.5 mm. long; calyx cupuliform, about 1.4 mm. long and wide, its rim truncate or very obscurely 4-toothed; corolla purplish; drupes globose, about 3 mm. in diameter, glabrous, wrinkled when dry.

The type of this species was collected by Maximo Ramos and Gregorio E. Edaño (Herb. Philip. Bur. Sci. 26233) in open places along streams, at an altitude of about 50 meters, on Mount Umingan, Nueva Ecija Province, Luzon, Philippine Islands, on August 8, 1916, and was deposited in the herbarium of the Bureau of Science at Manila, now unfortunately destroyed.

Merrill (1917) comments that this is "A species well characterized by its slenderly caudate-acuminate, prominently toothed, near-

ly glabrous, very prominently nerved leaves, and its lax, few-flowered inflorescences. It is perhaps as closely allied to Callicarpa dolichophylla Merr. as to any other described species, but is entirely different in its vegetative and inflorescence characters."

Material of this species has been misidentified and distributed in herbaria under the names C. elegans Hayek, C. formosana var. glabrescens Moldenke, and C. japonica var. dichotoma (Lour.) Bakh.

Six herbarium specimens, including an isotype, have been examined by me.

Citations: PHILIPPINE ISLANDS: Luzon: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 26333] (N--isotype). Mindanao: Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 49011] (Bz--17656, Bz--17657, Ca--324035, N, W--1527938).

CALLICARPA PILOSISSIMA Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 75 & 76. 1886.

Synonymy: Callicarpa pillosissima Maxim. ex Lee & Keng, Taiwania 1 (5): 5, sphalm. 1954. Callicarpa acuminatissima Liu & Tseng, Quart. Journ. Taiwan Mus. 10 (2): 55. 1957 [not C. acuminatissima Teijsm. & Binn., 1919]. Callicarpa pilossissima Maxim. ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962.

Bibliography: Maxim., Bull. Acad. Imp. Sci. St. Pétersb. 31: 75 & 76. 1886; Maxim., Mél. Biol. 12: 504, 506, & 507. 1886; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26 [Ind. Fl. Sin. 2]: 254. 1890; Henry, Trans. Asiat. Soc. Japan 24, Suppl. 70. 1896; J. Matsum., Bot. Mag. Tokyo 13: 114--115. 1899; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 73. 1901; Matsum. & Hayata, Enum. Pl. 298--299. 1906; Kawakami, List Pl. Formos. 84. 1910; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; H. J. Lam, Verbenac. Mal. Arch. 58 & 65. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., sér. 3, 3: 23. 1921; T. Itô, Taiwan Shokubutsu Dzusetsu [Illustr. Formos. Pl.], ed. 1, 7, pl. 604 (1927) and ed. 2, 7, pl. 604. 1928; S. Sasaki, List Pl. Formos. 350. 1928; Yamamoto, Journ. Soc. Trop. Agr. Formos. 6: 554--555. 1934; Kanehira, Formos. Trees, ed. 2, 645--646 & 716, fig. 602. 1936; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 73. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 56, 57, & 87. 1942; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 49. 1947; Moldenke, Alph. List Cit. 4: 985 & 1136. 1949; Moldenke, Phytologia 3: 139 & 140. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 131, 133, 146, & 177. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 280, 281, 291, & 311. 1951; Moldenke, Phytologia 4: 75 & 122. 1952; Lee & Keng, Taiwania 1 (5): 5. 1954; Liu & Tseng, Quart. Journ. Taiwan Mus. 10 (2): 55--56, pl. 1 & 2. 1957; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 73. 1959; Moldenke, Résumé 168, 172, 187, 194, & 444. 1959; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1202 & 1210, pl. 1010 & 1018. 1962; Moldenke, Résumé Suppl. 3: 30. 1962; Li, Woody Pl. Taiwan 818, 819, & 944. 1963; Moldenke,

Phytologia 13: 499 (1966) and 14: 141 & 142. 1966; G. Taylor, Ind. Kew. Suppl. 13: 21. 1966; Moldenke, Résumé Suppl. 16: 18. 1968; Moldenke, Phytologia 21: 109. 1971.

Illustrations: T. Itô, Taiwan Shokubutsu Dzusetsu [Illustr. Formos. Pl.], ed. 1, pl. 604 (1927) and ed. 2, pl. 604. 1928; Kanehira, Formos. Trees, ed. 2, 646, fig. 602. 1936; Liu & Tseng, Quart. Journ. Taiwan Mus. 10: pl. 1 & 2. 1957; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1010 & 1018. 1962.

The original description of this species by Maximowicz (1886) is "Pilis setosis gilvis patentibus ad ramulos petiolos cymas et paginam inferiorem foliorum dense hirsuta, foliis breve petiolatis ex lineari oblongolanceolatis sensim longe acuminatis basi subcordatis obsolete serrulatis, superne pilis albidis brevioribus dense molliter pubescentibus; pedunculis petiolos duplo superantibus, cymis divaricatobifidis densiusculis, calyce hispido obtuse dentato, corollae glabrae lobis tubo apice dilatato plus triplo brevioribus, staminibus corollam stylumque leviter bilobum triplo superantibus. Formosa (Oldham! n. 387. flor.). Similis Callicarpa angustae Schauer (Cuming! no. 1425) e Philippinis, quae tamen differt pube, foliis subtus incanis basi cuneatis, corolla extus tomentosa; nec non Callicarpa caudatae m., cujus diagnosim inserere liceat."

Recent collectors describe this plant as a bush or shrub, 2—3 m. tall, the corollas pale-purple or violet, inhabiting mountains and woods, to 600 m. altitude, flowering in February, September, and December, fruiting in September. Wilson reports it "abundant in forests" on Formosa. Vernacular names reported for it are "âng-bîn nafg-chiong-kun", "aoge-murasaki", "hosoba-murasaki", "kyabazyu-bazyu", "narrow-leaved beauty-berry", "rakabo", and "Taiwan beauty-berry". The corollas on Gressitt 247 are described as "pale-purple" and those on T. Kaudern 424 as "violet". The C. acuminatissima Teijsm. & Binn., referred to in the synonymy above, is the name-bringing synonym of Geunsia acuminatissima (Teijsm. & Binn.) H. J. Lam.

Henry (1896) cites A. Henry 267, Matsumura (1899) cites Owatari s.n. and Tashiro 18a, while Matsumura & Hayata (1906) cite Hayata s.n., Kawakami s.n., Miyake s.n., Owatari s.n., and Tashiro s.n. Chang (1951) cites Oldham 387 (the type) and Tanaka & Shimada 13419, but the latter is regarded by me as representing var. henryi Yamamoto. Li (1963) does not regard Yamamoto's variety as distinct and cites Faurie 1468, Gressitt 247 & 267, A. Henry 120, Kawakami & Shimada s.n., Keng s.n., Miyake s.n., Oldham 387, Owatari s.n., Price 41, Suzuki 19262 & s.n., Tanaka 5477, Tanaka & Shimada 13419, Tashiro A.18, and E. H. Wilson 9649 & 11088. All these collections are from Formosa, and Matsumura & Hayata (1906) actually assert that the species is endemic to that island.

Lam (1919) asserts that the species is related to C. caudata

Maxim., C. macrophylla Vahl, C. nudiflora Hook. & Arn., C. pedunculata R. Br., and C. rubella Lindl. Bakhuizen van den Brink (1921) reduces it to synonymy under what he calls C. cuspidata Roxb. (which I regard as C. pedunculata R. Br.), but this is manifestly incorrect.

Material of C. pilosissima has been misidentified and distributed in herbaria under the names C. cuspidata Roxb., C. longifolia Lam., and C. rubella Lindl. On the other hand, the Kanehira & Suzuki s.n. [Herb. Nat. Taiwan Univ. 21012], Keng s.n. [Kangu, Oct. 26, 1950], Simada 5207, Tanaka & Shimada 13419, and E. H. Wilson 9649 & 11088, distributed and cited by some authors as typical C. pilosissima, are all actually var. henryi Yamamoto.

In all, 20 herbarium specimens of the typical form of this species have been examined by me.

Citations: FORMOSA: Gressitt 247 (S); A. Henry 267 (N); Oldham 387 (S--isotype); E. H. Wilson 11088 (Ph). GREATER SUNDA ISLANDS: Celebes: Bish 69 (Bz—17529); Bloembergen 4165 (Bz—17527); T. Kaudern 424 (S); W. Kaudern 313 (S); Kjellberg 3889 (S), 3890 (Bz—17528, S); Pijl 775 (Bz—17526); Rachmat 206 (Bz—17532, Bz—17533), 388 (Bz—17534), 994 (Bz—17530, Bz—17531). Sumatra: Bünnemeijer 5646 (Bz—17558, Bz—17559, Ut—58350).

CALLICARPA PILOSISSIMA var. HENRYI Yamamoto, Journ. Soc. Trop. Agr. Formos. 6: 554—555. 1934.

Bibliography: Yamamoto, Journ. Soc. Trop. Agr. Formos. 6: 554—555. 1934; Moldenke, Bol. Soc. Venez. Cienc. Nat. 11: 49. 1947; Moldenke, Phytologia 3: 139. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 133 & 177. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; H.-T. Chang, Act. Phytotax. Sin. 1: 280, 292, & 311. 1951; Moldenke, Phytologia 4: 75. 1952; Moldenke, Résumé 168, 172, & 444. 1959.

Yamamoto's original (1934) description of this variety is "*Callicarpa sp. nov. in Sched. Herb. Bort. Bot. Nov. Eborac. Ramus tenuiter, ubique villosus. Folia petiolata, elongato- vel lineari-lanceolata, 15—22 cm longa, 2.5—3.5 cm lata, apice sensim lineari-acuminata vel longe caudata et ad summum obtusa, basi obtusissima vel rotundata raro subcordata, margine minute serrata, supra pagina plus minusve purpurascentia, subtus pallida, utrinque pubescentia, supra ad costam et venas dense villosissima; petiolis brevibus 5 mm longis ubique villosissimis. Cymae divericatae, pedunculis petiolo triplo superantibus molliter hirsutis."

The type of the variety was collected by Augustine Henry (no. 120) at Bankinsing, Formosa, and is deposited in the Britton Herbarium at the New York Botanical Garden. Yamamoto (1934) cites also Yamamoto 2366 from Mount Rugatsuzan and comments that "This variety differs from the species in having thinner longer petioled leaves which are not as densely pubescent as the form Maximowicz described". He records the vernacular name "usuba-murasakishikibu".

Recent collectors describe this plant as a semi-woody bush, 2—5 m. tall, the stems to 7 cm. in diameter, the corollas pale-purple (Gressitt 247), pink (Lau 20149), or pinkish (Keng s.n.), and the fruit purple [or white?]. It has been found in flower in February, June, July, and October, and in fruit in January, June, October, and November, at 550 m. altitude, inhabiting roadsides. Wilson reports it as "common" or "abundant in forests" on Formosa. Vernacular names are the one previously mentioned and "mai tap kong".

Chang (1951) cites only the type collection, A. Henry 120. Gressitt makes the very ambiguous statement "fruit purple, white" -- exactly what he means by this is not clear.

Material of this variety has often been misidentified and distributed in herbaria as typical C. pilosissima Maxim. or under the cheironymous misspelling "C. pilossissima Maxim."

In all, 17 herbarium specimens, including the type collection, and one mounted photograph of this variety have been examined by me.

Citations: CHINA: Kwangtung: Lau 20149 (Bz--18594, N). FORMOSA: Gressitt 247 (N); A. Henry 120 (N--isotype); Kanehira & Suzuki s.n. [Herb. Nat. Taiwan Univ. 21012] (W--photo); H. Keng s.n. [Kangu, Oct. 26, 1950] (W--2036069); Simada 5207 (Ca--345487); Tanaka & Shimada 13419 (B, Ca--517688, Go, La, Mi, N, S, W--1579780); E. H. Wilson 9649 (W--1052829), 11088 (W--1092614); Yamamoto 2366 (N).

CALLICARPA PLATYPHYLLA Merr., Philip. Bur. Govt. Lab. Bull. 29: 57--58. 1905.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 13: 57--58. 1918; E. D. Merr., Enum. Philip. Flow. Pl. 3: 387. 1923; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87 (1942) and [ed. 2], 141 & 177. 1949; Moldenke, Résumé 183 & 444. 1959.

Merrill's original (1918) description of this species is as follows: "A tree about 8 m. high, the branches 1 cm. in diameter or less, glabrous, somewhat 4-angled, the branchlets densely puberulent with pale dirty brown indumentum. Leaves subcoriaceous, oblong-elliptic or obovate-elliptic, entire, slenderly subcaudate-acuminate, base acute, 35 to 50 cm. long, 18 to 20 cm. wide, the upper surface glabrous, olivaceous, shining, the lower very densely covered with minute matted, pale, puberulent hairs, the individual hairs not evident under an ordinary lens; lateral nerves about 12 on each side of the midrib, very prominent on the lower surface as are the subparallel primary reticulations, curved, anastomosing; petioles stout, densely puberulent, angled, 4 to 5 cm. long. Cymes axillary, peduncled, rather densely stellate-pubescent with pale hairs, dichotomous, about 7 cm long and 9 cm wide, the bracts linear-lanceolate, 4 to 5 mm long, the bracteoles numerous, similar to the bracts but about 1 mm long. Calyx truncate, cup-shaped, 3 mm in diameter, glabrous or nearly

so. Fruits globose, about 3.5 mm in diameter."

The species is based on Philip. Forest. Bur. 26967, collected by José Maria Velasco in forests, at about 50 meters altitude, at Pamplona, Cagayan Province, Luzon, Philippines, on August 9, 1917, and was deposited in the herbarium of the Philippine Bureau of Science at Manila before its destruction during World War II. Merrill comments that this is "A most remarkable species, well characterized by its very large, entire, slenderly acuminate leaves, which are glabrous above and densely matted puberulent on the lower surface with a pale-brownish, shining non-stellate indumentum; glands, if present, are entirely obscured by the indumentum."

So far I have seen only one herbarium specimen and 2 mounted photographs of this species.

Citations: PHILIPPINE ISLANDS: Luzon: Edaño s.n. [Herb. Philip. Bur. Sci. 79528] (Bz--18595, N--photo, Z--photo).

CALLICARPA PLUMOSA Quisumb. & Merr., Philip. Journ. Sci. 37: 196—197. 1928.

Synonymy: Callicarpa plumosa Merr. & Quisumb. ex Moldenke, Résumé Suppl. 3: 30, in syn. 1962.

Bibliography: E. D. Merr., Philip. Journ. Sci. 37: 196--197. 1928; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87 (1942) and [ed. 2], 141 & 178. 1949; Moldenke, Résumé 183 & 444. 1959; Moldenke, Résumé Suppl. 3: 19, 21, & 30. 1962; Moldenke, Phytologia 14: 179. 1966.

Merrill's original (1928) description of this species in its English version is as follows: "A shrub about 2 m high; the branchlets and the lower surface of the leaves densely stellate-tomentose with rather soft, plumose and stellate hairs; branches terete or somewhat compressed at the nodes, pale grayish, the plumose indumentum castaneous. Leaves subcoriaceous, lanceolate, 21 to 34 cm long, 6 to 10 cm wide, entire, narrowed upward to the more or less falcate apex, acutely acuminate, base acute, the upper surface green, smooth, glabrous, the lower surface densely pale stellate-pubescent, not at all glandular, the indumentum on the midrib and nerves plumose, more or less castaneous; lateral nerves distant, 9 or 10 on each side of the midrib, very prominent, curved, the reticulations distinct; petioles densely tomentose, 2 to 3 cm long. Cymes axillary, many-flowered, dichotomous, very densely castaneous-plumose-tomentose, pedunculate, 3.5 to 5.5 cm long; flowers somewhat crowded, their pedicels 0.5 to 1 mm long; calyx membranaceous, cup-shaped, shortly 4-lobed, densely stellate-plumose, 1.5 to 1.75 mm long and 1.5 to 1.75 cm in diameter; corolla membranaceous, 4-lobed, 3.5 to 3.75 mm long, the lobes 0.75 mm long, about 1 mm wide, oblong-ovate, subacute; stamens 4, exserted, 5.5 to 6 mm long; anthers oblong, about 1.25 mm long; the filaments very slender; style very slender, about 6 mm long. Fruit globose, glabrous, about 2.5 mm in diameter, surrounded for about two-thirds of its length by the calyx."

The type of this species was collected by Maximo Ramos and Gregorio E. Edaño along forested streams, at about 400 meters altitude, at San Mariano, in Isabela Province, Luzon, Philippine Islands, and is Philip. Bur. Sci. 46928, deposited in the herbarium of the Philippine Bureau of Science at Manila, now destroyed. Merrill comments (1928): "A species characterized by its lanceolate, entire leaves, which are green and glabrous above and densely pale stellate-pubescent beneath, the indumentum on its branchlets, and inflorescences being plumose and castaneous."

Recent collectors describe the plant as 2 m. tall, the stems 4--6 cm. in diameter, the corollas yellow [Herb. Philip. Bur. Sci. 46928], the stamens whitish-blue [Herb. Philip. Bur. Sci. 47121], the pollen yellow, and the fruit violet. It has been found growing in secondary forests at low altitudes and along forest streams, to 400 m. altitude, flowering in February, March, and August, and fruiting in February. Material has been misidentified and distributed in herbaria as C. erioclona Schau.

In all, 10 herbarium specimens, including the type collection, and 2 mounted photographs of this species have been examined by me.

Citations: INDOCHINA: Cochinchina: Pierre 5227 (Ca--54670). PHILIPPINE ISLANDS: Luzon: M. K. Clemens 16799 (Ca--285401); Haenke 81 (Ca--280934); Loher 12347 (Ca--229196, Ca--243060); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 46928] (B--isotype, Bz--17576--isotype, Ca--329894--isotype, N--isotype, N--photo of isotype, Z--photo of isotype), s.n. [Herb. Philip. Bur. Sci. 47121] (Ca--309746).

CALLICARPA POILANEI Dop, Bull. Soc. Hist. Nat. Toulouse 64: 502--503. 1932.

Bibliography: P. Dop, Bull. Soc. Hist. Nat. Toulouse 64: 500, 502--503, 511, & 512. 1932; P. Dop in Lecomte, Fl. Gén. Indo-Chine 4: 787. 1935; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Fletcher, Kew Bull. Misc. Inf. 1938: 412 & 413. 1938; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 59 & 87. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 77. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 136, 137, & 178. 1949; Moldenke, Phytologia 3: 380. 1950; Anon., U. S. Dept. Agr. Bot. Subj. Index 15: 14354. 1958; Moldenke, Résumé 175, 177, & 444. 1959; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959.

Dop (1932) describes this plant as follows: "Frutex vel arbor 5--6 m. altus. Ramuli subquadrangulares tenuiter ferrugineo tomentoso stellato obtecti. Folia paullo coriacea, elliptico-oblonga, basi acuta et paullo decurrentia, obtusa vel acuta et abrupte acuminato-caudata apice, sinuato-denticulata vel sinuato-dentata, supra sparse pubescentia pilis stellatis in juventute, adulta glabra et brunnea in sicco, subtus tenuissimo tomento aprimo griseo vel albido et nonnullis pilis stellatis erectis obtecta, 20--28 cm. longa x 5--7,5 cm. lata; nervus gracilis, teres,

subtus valde prominens; costae 18—22, primum rectilineares, deinde abrupte recurvatae et ascendentes; venae subparalleles; reticulationes conspicuae; petiola 18—25 mm. longa, cum crista prominente conjuncta. Inflorescentiae: cymae stellato-pubescentes, dichotomiae, multiflorae, 2--3 cm. longae et latae; bracteae minimae; pedunculi 8--10 mm. longi; pedicelli 1 mm. longi; flores 4 mm. longi. — Calyx truncatus, valde stellato-tomentosus, 2 mm. longus, dentibus 4 minutissimis. Corolla basi valde coarctata deinde late dilatata, extus valde stellato-tomentosa, 4 mm. longa; tubus amplus, 3 mm. longus; lobi 4 rotundati, 1 mm. longi. Stamina 4; filamenta corollam aequantia et basi inserta; antherae exsertae, valde dorsum glandulosae. Ovarium fere glabrum, glandulosum; stylus stamina aequans; stigma capitatum. — Fructus: drupa nigra, glabra, 3 mm. lata."

The species is based on Poilane 8265 from Annam, Chevalier 31781, Harmand s.n., and Poilane 17611 from Cambodia, Pierre 5226 from Cochinchina, and Pierre s.n. from Thailand. Dop (1932) comments that "Cette espèce est trés voisine du C. angustifolia King et Gamble.....dont elle se rapproche par la crête interoétiolaire. La structure de la fleur est la même, avec cependant une différence importante. Dans C. Poilanei l'ovaire est presque glabre, tandis qu'il est villeux dans l'espèce de King et Gamble. Des différences plus facilement visibles s'accusent dans la forme des feuilles et leur revêtement. Dans mon espèce les feuilles sont elliptiques-oblongues et non lancéolées, aiguës et non longuement attenuées à la base, brusquement acuminées-caudées et non aiguës-attenuées au sommet. Presque entieres dans l'espèce de King et Gamble les feuilles de C. Poilanei sont sinuées-denticulées et même abondamment sinuées-dentées. Enfin le tomentum da la face inférieure est beaucoup plus fin que dans C. angustifolia."

In all, 9 herbarium specimens of this species, including cotype collections, have been examined by me.

Citations: THAILAND: Pierre s.n. [Luang, 8/1868] (B--cotype, N--cotype, S--cotype). INDOCHINA: Cambodia: Poilane 17611 (W—2496741--cotype). Cochinchina: Pierre 5226 (B--cotype, Ca—38112-cotype, Ca--54655--cotype), s.n. [on montibus Dinh] (B). Tonkin: Pételot 6922 (N).

CALLICARPA PRINGLEI Briq., Bull. Herb. Boiss., sér. 1, 4: 345—346. 1896.

Synonymy: Callicarpa americana Sessé & Moc., Pl. Nou. Hisp. 2: 18. 1893 [not C. americana Blanco, 1884, nor Hort., 1936, nor L., 1753, nor Lam., 1966, nor Lour., 1794, nor Roxb., 1945, nor Thunb., 1926, nor Willd., 1820]. Callicarpa pringleii Briq. ex Moldenke, Suppl. List Invalid Names 2, in syn. 1941. Callicarpa priglei Briq. ex H. N. & A. L. Moldenke, Pl. Life 2: 77, sphalm. 1948.

Bibliography: Sessé & Moc., Pl. Nou. Hisp. 2: 18. 1893; Briq.,

Bull. Herb. Boiss., sér. 1, 4: 345--346 & 924. 1896; Thiselt.-Dyer, Ind. Kew. Suppl. 2: 32. 1904; P. C. Standl., Contrib. U. S. Nat. Herb. 23: 1253. 1924; Moldenke in Fedde, Repert. Sp. Nov. 39: 301 (1936) and 40: 43--45, 57, 120, 123, 127, 128, & 130. 1936; Moldenke, Geogr. Distrib. Avicenn. 13. 1939; Moldenke, Prelim. Alph. List Invalid Names 9. 1940; Moldenke, Carnegie Inst. Wash. Publ. 522: 198--200. 1940; Moldenke, Suppl. List Invalid Names 2. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 16 & 87. 1942; Moldenke, Alph. List Invalid Names 8 & 10. 1942; Moldenke, Alph. List Cit. 1: 227, 229, 301, 302, 306, 307, 311, & 316. 1946; H. N. & A. L. Moldenke, Pl. Life 2: 77. 1948; Moldenke, Castanea 13: 114. 1948; Moldenke, Alph. List Cit. 2: 339, 418, 421, 426, 435, & 467 (1948), 3: 656, 785, 786, 807, 829, & 925 (1949), and 4: 1019, 1026, 1028, 1053, & 1111. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 28, 34, & 178. 1949; Moldenke, Phytologia 3: 451. 1951; Moldenke, Résumé 34, 40, 241, 246, & 444. 1959; Langman, Select. Guide Lit. Flow. Pl. Mex. 1010. 1964; Moldenke, Résumé Suppl. 13: 6. 1966; Moldenke, Phytologia 14: 433, 434, 439, 475, & 476 (1966), 14: 107, 111, & 191 (1966), and 16: 367. 1968; Marroquin, Cuad. Inst. Invest. Cient. 14: 13. 1968; Moldenke, Phytologia 20: 488 (1971) and 21: 50, 102, & 385. 1971; J. A. Clark, Card Ind. Gen. Sp. Pl. n.d.

Detailed descriptions and discussions of this species have been given by me in previous publications. Recent collectors describe it as a large shrub, 5 m. tall, with white corollas [Moore 3392, Pennell 17918], growing in mixed woods, low tropical woods, tropical forests, and on rocky limestone areas, at altitudes of 50 to 1200 meters. They have found it in flower from June to August and in fruit in June and August.

Standley (1924) distinguishes it from the very closely related and perhaps conspecific C. acuminata H.B.K. as follows:

Leaves persistently but minutely stellate-pubescent on the upper surface.....C. acuminata.

Leaves glabrous on the upper surface except when very young.....C. pringlei.

As I have stated in previous publications, it is probable that Briquet's plant deserves no more than varietal or form status under C. acuminata, since so many intermediate specimens exist. Gaumer, in fact, suggested "C. acuminata H.B.K. form?" on the labels of one of his collections.

The type of C. americana Sessé & Moc. is Sessé, Mociño, Castillo, & Maldonado 519 [ic. no. 293], deposited in the Madrib herbarium.

It should be pointed out here that the C. americana of Linnaeus, referred to in the synonymy above, is a valid species, with the homonyms attributed to Lamarck, to Roxburgh, and to Willdenow as synonyms, while the C. americana of Blanco is C. formosana Rolfe, that of Loureiro is C. candicans (Burm. f.) Hochr., that attributed to Thunberg is C. japonica Thunb., and that attributed to horticultural origin is C. longifolia Lam.

The Arrington s.n. [27.IX.1964], H. E. Moore 3392, and Rzedowski 10345 & 10689a, distributed as C. pringlei, are all better placed in typical C. acuminata H.B.K.

In all, 78 herbarium specimens of C. pringlei, including the type collection, and 36 mounted photographs have been examined by me.

Additional & emended citations: MEXICO: San Luis Potosí: Kenoyer s.n. [Valles, 8-39] (Mi); LeSueur 425 (Au); Edw. Palmer 123 (Ca--148594), 251 (Cm, Me, Mi, Mi--photo); F. W. Pennell 17918 (Me, N, N, W--1640841); Pringle 3094 (Br--isotype, Ca--104992--isotype, Cm--isotype, Ed--isotype, Me--isotype, Me--isotype, Mm--15348--isotype, Ms--30944--isotype, Mu--1738--isotype, Ob--50625--isotype, P--isotype, Pa--isotype, Po--63852--isotype, Vt--isotype, Vu--isotype); J. Rzedowski 7766 (Ip). Yucatán: Gaumer & sons 23886 (Us). State undetermined: Kenoyer & Crum 3622 [Ocampo] (Mi); Sessé, Mociño, Castillo, & Maldonado 519 [Patzahumacachi, El Espinal; ic. no. 293] (E--photo, F--850366, N--photo, Q, Z--photo).

CALLICARPA PSEUDORUBELLA Chang, Act. Phytotax. Sin. 1: 287--288. 1951.

Bibliography: H.-T. Chang, Act. Phytotax. Sin. 1: 271, 279, 287--288, & 311. 1951; G. Taylor, Ind. Kew. Suppl. 13: 21. 1966; Moldenke, Résumé Suppl. 14: 3. 1966.

Shrub, 1 m. tall; branchlets terete, the youngest ones stellate-pubescent, the older ones sparsely puberulent; internodes 2--2.5 cm. long; leaves manifestly petiolate; petioles 3--5 mm. long, stellate-pubescent; leaf-blades oblong or elliptic-oblong, 4--5.5 cm. long, 1.5--2 cm. wide, acute at the apex, crenate-serrulate along the upper 3/4 of the margins, subrounded to obtuse at the base, yellow-punctate on both surfaces, green and puberulent above, paler and sparsely pubescent beneath, stellate-pubescent along the midrib and secondaries, the midrib and the 5 or 6 secondaries per side obscure above and prominulent beneath; cymes 1.5 cm. in diameter, 3 times dichotomous; peduncles thick, 8--10 mm. long, stellate-pubescent; bractlets subulate, 2.5 mm. long; calyx 1 mm. long, minutely puberulent with simple hairs, its teeth inconspicuous; corolla rose-purple, minutely puberulent like the calyx, its tube 1.5 mm. long, the lobes broadly ovate, 0.7 mm. long; stamens exserted; filaments 3 mm. long; anthers 0.8 mm. long, punctate, longitudinally dehiscent; ovary glabrous or sparsely punctate; style 5 mm. long; fruit 2 mm. in diameter.

This species was based by Chang on S. Y. Lau 20149, collected at Canton, Kwangtung, China, in 1932, and deposited in the herbarium of the Botanical Institute of Sunyatsen University in Canton. He compares the species with C. rubella f. crenata P'ei and C. dichotoma (Lour.) K. Koch, but, unfortunately only in Chinese characters and apparently cites no other material. It

is known to me only from his original description.

CALLICARPA PSILOCALYX C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 569—570. 1885.

Synonymy: Callicarpa pilocalyx Clark ex Li, Woody Fl. Taiwan 821, sphalm. 1963.

Bibliography: C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 569—570. 1885; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; Gamble, Man. Indian Timb., ed. 2, 525. 1902; Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 220. 1911; Rehd. in C. S. Sarg., Pl. Wils. 3: 367. 1916; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 23. 1921; Fletcher, Kew Bull. Misc. Inf. 1938: 412 & 415. 1938; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 54, 55, 59, & 87. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 125, 128, 137, & 178. 1949; Anon., Kew Bull. Gen. Index 1929-1956, 59. 1959; Moldenke, Résumé 160, 165, 177, & 444. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Deb, Bull. Bot. Surv. India 3: 314. 1961; Li, Woody Fl. Taiwan 821. 1963; Moldenke, Résumé Suppl. 8: 3. 1964; Moldenke, Phytologia 14: 57 & 142 (1966) and 16: 373. 1968; Moldenke, Résumé Suppl. 16: 9. 1968; Moldenke, Phytologia 21: 101, 102, & 108. 1971.

Clarke's original (1885) description of this plant is "arborescent, leaves elliptic acuminate denticulate mature nearly glabrous, cymes small short-peduncled stellately villous, calyx membranous in flower glandular scarcely hairy. Khasia Mts., alt. 4-5000 ft.; Wallich, J. D. H., &c. A small tree; branchlets densely stellate-tomentose. Leaves 8 by 2 3/4 in., or 2 1/2 by 1 in., base rounded or cuneate thinly membranous, mature with scattered stellate hairs on the midrib beneath, tertiary venation close prominent, glands minute scattered; petiole 1/8 — 1/4 in. Peduncles mostly very short; cymes usually few-fld.; pedicels sometimes pink. Calyx 1/24 in., minutely 4-toothed, greenish or pinkish minutely gland-dotted, with a few scattered hairs when young whiteish or membranous in fruit. Corolla pink. Fruit scarcely 1/12 in. diam. — C. longifolia Benth, Fl. Hongk. 270 (not of Lamk.), in the glabrous calyx, inflorescence, and structure of leaves comes very near this; but in that the leaves are linear-lanceolate, and the fruit very much larger."

Bentham's plant, referred to above, is now regarded a being C. longissima (Hemsl.) Merr.

Recent collectors describe C. psilocalyx as a straggling shrub or small tree, about 2 m. tall, the corollas pink-violet or purple. They have found it growing in wet evergreen forests, at altitudes of 400—600 meters, flowering in May and August, fruiting in August. Smitinand describes it as "common in evergreen jungles" in Thailand. Deb (1961) records it from Manipur, India. The corolla is describes as "purple" on Smitinand 4837 and as "pink-violet" on Larsen, Santisuk, & Warncke 3232.

Rehder (1916) asserts that C. psilocalyx is related to C. bodinieri var. giraldii (Hesse) Rehd., differing from that taxon "chiefly in its densely pubescent branchlets, in its long-acuminate leaves usually obtuse or rounded at the base, shorter petioles, smaller inflorescences, and in the filaments scarcely exceeding the corolla-lobes". Bakhuizen van den Brink (1921) reduces it to what he calls C. cuspidata Roxb., while Fletcher (1938) cites "C. cuspidata Roxb., in part" as a synonym of C. psilocalyx!

The Mrs. D. J. Collins 1667, distributed as C. psilocalyx, is actually C. longifolia Lam.

In all, 4 herbarium specimens of C. psilocalyx have been examined by me.

Citations: THAILAND: Dee 1009 [Herb. Roy. Forest Dept. 23036] (Z); Larsen, Santisuk, & Warncke 3232 (Ac), 3236 (Ac); Smitinand 4837 (N).

CALLICARPA RAMIFLORA Merr., Philip. Journ. Sci. Bot. 3: 262—263. 1908.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 3: 262—263 (1908) and 7: 339. 1912; Prain, Ind. Kew. Suppl. 4, pr. 1, 34. 1913; H. J. Lam, Verbenac. Mal. Arch. 47, 62—63, 83, & 362. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 11. 1921; E. D. Merr., Enum. Philip. Flow. Pl. 3: 387. 1923; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 62 & 87 (1942) and [ed. 2], 141 & 178. 1949; Prain, Ind. Kew. Suppl. 4, pr. 2, 34. 1958; Moldenke, Résumé 183 & 444. 1959; Moldenke, Phytologia 14: 145 (1966) and 16: 366. 1968; Van Steenis, Blumea 15: 151. 1969.

A small tree, 4—5 m. tall; trunk 4—5 cm. in diameter at breast height; branches stout, terete, gray, glabrate; branchlets ferruginous-floccose or -hirsute; leaves opposite, petiolate; petioles 1—3.5 cm. long, ferruginous-floccose or very densely ferruginous-hirsute; leaf-blades subchartaceous or subcoriaceous, elliptic-ovate or oblong-elliptic to broadly ovate or rotundate, about 30 cm. long, 15—20 cm. wide, somewhat abruptly short-acuminate at the apex, crenate-denticulate or obscurely denticulate along the margins except near the base, acute or rounded at the base, glabrous above when mature except for the ferruginous-pubescent midrib and larger venation, more or less densely stellate-tomentose beneath; secondaries 12—14 per side, prominent beneath; veinlet reticulation very distinct; cymes small, fasiculate, congested, (pseudo-)cauliflorous, in the axils of the branchlets or of fallen leaves on older branches, 1—1.5 cm. long, ferruginous-floccose or densely hirsute; peduncles 3 mm. long; calyx subtubular, 4 mm. long, densely hairy with simple hairs or stellate-villous, glandulose, somewhat scaly, its rim 4-toothed; corolla pinkish-blue or white, its tube 5 mm. long, glabrous below, the upper portion and the lobes densely hairy and glandulose with simple hairs, the lobes 4, oblong, 2 mm. long, obtuse at the apex; stamens 4, yellow; filaments 4 mm. long; anthers 2 mm. long, glandular-dotted; style 6 mm. long; stigma capitate, distinctly

4-lobed; drupes "green" [when immature], produced on the trunk up to the branches.

This species is based on Mrs. Clemens 1167 from Camp Keithley, Lake Lanzo, Mindanao, Philippine Islands, collected in September, 1907, and s.n. collected at the same locality in July, 1907, both deposited in the herbarium of the Philippine Bureau of Science at Manila, but now unfortunately destroyed. Merrill (1908) comments that this is "A species well characterized by its large leaves, and fascicled, congested, short cymes which are from the branches below the leaves."

Lam (1919) cites M. Ramos 15278 from Dagana, Leyte, Philippine Islands, and states that the species grows also on Mindanao. He asserts that it is related to C. cauliflora Merr., which he distinguishes in his key by its leaf-blades being acute or cuneate to attenuate at the base. Bakhuizen van den Brink (1921) reduces C. ramiflora to the synonymy of what he calls C. pentandra var. typica f. hexandra Bakh. [now known as Geunsia hexandra (Teijsm. & Binn.) Koord.], under which name specimens have been misidentified and distributed in herbaria.

Callicarpa ramiflora has been found growing along forest streams, at an altitude of 1000 meters, flowering in August, and fruiting in November and December. The fruits mounted in a separate packet on Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 75343] in the herbarium of the University of California at Berkeley may not belong to this plant; the corollas of this collection are described as "pinkish-blue", but Lam (1919) avers that in the species under discussion here they are "white".

The M. Ramos s.n. [Herb. Philip. Bur. Sci. 41540], cited under C. cauliflora Merr. in the present series of notes, bears a striking resemblance to C. ramiflora.

In all, 6 herbarium specimens of C. ramiflora have been examined by me.

Citations: PHILIPPINE ISLANDS: Catanduanes: M. Ramos s.n. [Herb. Philip. Bur. Sci. 30275] (Bz--18556, W--1290074); Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 75343] (Bz--18553, Ca--449130, N, Ut--6241a).

CALLICARPA RANDAIENSIS Hayata ex Kawakami, List Pl. Formos. 84, hyponym. 1910; Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 222--223. 1911.

Synonymy: Callicarpa parvifolia Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): 222. 1911 [not C. parvifolia Hook. & Arn., 1838]. Callicarpa parviflora Hayata apud Li, Woody Fl. Taiwan 823, sphalm. 1963.

Bibliography: Kawakami, List Pl. Formos. 84. 1910; Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 222--223. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; Hayata, Icon. Pl. Formos. 2: 126, pl. 37 & 38. 1912; Prain, Ind. Kew.

Suppl. 5, pr. 1, 43. 1921; Nakai, Bot. Mag. Tokyo 36: 23. 1922; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 605 (1927) and ed. 2, 605. 1928; S. Sasaki, List Pl. Formos. 350. 1928; Stapf, Icon. Bot. Ind. Lond. 1: 526. 1929; L. H. Bailey, Cat. Florists Handl. Verbenac. n.p. 1935; Kanehira, Formos. Trees, ed. 2, 646—647 & 716, fig. 603. 1936; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 57 & 87 (1942) and [ed. 2], 133 & 178. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 280, 294, & 311. 1951; Moldenke, Résumé 172, 245, & 444. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Moldenke, Phytologia 8: 57. 1961; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1209 & 1211, pl. 1017 & 1019. 1962; Moldenke, Résumé Suppl. 3: 18. 1962; Moldenke, Biol. Abstr. 37: 1062. 1962; Hocking, Excerpt. Bot. A.5: 45. 1962; Li, Woody Fl. Taiwan 823. 1963; Moldenke, Phytologia 14: 167. 1966; Moldenke, Résumé Suppl. 14: 3 & 4 (1966) and 15: 17. 1967; Moldenke, Phytologia 15: 39 (1967) and 21: 213 & 333. 1971.

Illustrations: Hayata, Icon. Pl. Formos. 2: pl. 37 & 38. 1912; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 605 (1927) and ed. 2, 605. 1928; Kanehira, Formos. Trees, ed. 2, 647, fig. 603. 1936; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1017 & 1019. 1962.

Bush or shrub, 2--3.5 m. tall; trunk to about 1.25 cm. in diameter; branches whitish-gray or reddish-gray, slender, glabrous or subglabrous, lenticellate; branches slender, divaricate, stellate-tomentose or very short-pubescent; lenticels elevated; leaves opposite, petiolate, exstipulate, the young ones stellate-tomentose; petioles 3--10 mm. long, very short-tomentose; leaf-blades oblong-lanceolate, 4.5--10 cm. long, 1--3 cm. wide, acuminate at the apex, obtuse or acute at the base, serrate or serrulate with apiculate teeth along the margins except toward the entire apex and base, darkened above in drying, glabrate on both surfaces except for the very short-pubescent or stellate-tomentose midrib and larger veins, paler beneath and very sparsely stellate-pilose or short-pubescent, glandulose with minute shiny yellow punctiform glands on the lamina and with scattered minute impressed glands near the base and midrib; cymes axillary, about twice as long as the subtending petiole, few-branched, the branches short and divaricate; peduncles about 1.5 cm. long; bractlets narrow, subulate, rather thick, minute, about 1.5 mm long; pedicels 1--2 mm. long; calyx campanulate or campanulate-cupuliform, 1.5--2 mm. long, glandular-pulverulent externally, the rim irregularly and broadly triangular-dentate to 3- or 4-lobed, the teeth or lobes obtuse or acute at the apex; corolla pink or purple, to 5.5 mm. long, tubular-campanulate, glandular-pulverulent and yellow-dotted on the outside or glabrous, the tube about 4 mm. long and 2.5 mm. wide, the limb 5-lobed, the lobes about 1.5 mm. long, spreading, rounded; stamens 4, about 7 mm. long, attached at the base of the corolla-tube; filaments

filiform, about 6.5 mm. long; anthers oblong, about 2 mm. long and 1 mm. wide, truncate at the apex, sagittate at the base; style dilated above, filiform, about 8 mm. long; stigma dilated, broadly 2-fid or 2-lobed; ovary globose or ovoid, about 1.5 mm. long, attenuate at the apex, densely yellow-dotted; fruit at first green, later purple or violet, round.

This species is based on U. Mori 7023 from Randaizan, Formosa, collected in August, 1908, while C. parvifolia Hayata is based on Kawakami & Mori 2879 from Daimari, Taitō, Formosa. The species has been found growing in thickets and forests and on mountain-tops, at altitudes of 1165 to 2600 meters, flowering in June, July, and September, and fruiting in July, September, October, and December. Vernacular names recorded for it are "Luanta beauty-berry", "randai-murasaki", and "small-leaved beauty-berry". Hayata (1911) says that it is "near Callicarpa japonica Thunb., from which the present plant differs in having lanceolate leaves. Also near C. gracilis Sieb. et Zucc. and C. elegans Hayek, but differs from the former by the more conspicuously serrulate leaves, and from the latter, in having less acuminate, more hairy, leaves and larger flowers."

Nakai (1922) is of the opinion that "Callicarpa parvifolia is a young branch of C. randaiensis having still folding leaves and very young flower-buds. This species is very closely related to C. japonica, only differing by the slenderer stalks and narrower leaves."

Bailey (1935) states that C. randaiensis is offered to the horticultural trade by a nurseryman in Taihoku.

Hui-Lin Li (1963) reduces the species to synonymy under C. japonica var. angustata Rehd., saying "The reduction of C. randaiensis Hayata is made on the basis of the type and the original description. Callicarpa parviflora Hayata has been previously reduced to the synonymy of C. randaiensis by Kanehira." He cites H. H. Bartlett 6053, Faurie 394 & s.n., Gressitt 315, Hayata & Mori 7023 (which he says is the type collection), Kanehira 2878, Kawakami & Mori 2878 & 2879, Matuda 197 & s.n., Suzuki 6986 & s.n., and E. H. Wilson 10848. Chang (1951) cites nos. 3047 & 72751 from Formosa, but the collectors and/or herbarium names are, unfortunately, given only in Chinese characters. He compares the species with C. dichotoma (Lour.) K. Koch, but, again, only in Chinese. He erroneously cites C. parvifolia Hook. & Arn. to "Bot. Beechey's Voy. 295. 1836", but this binomial was actually published on page 305 of that work and the date of publication of the part containing that page is 1838.

The corollas of C. randaiensis are described as "pink" on Gressitt 315 and as "purple" on Gressitt 374. Material of the species has been misidentified and distributed in herbaria under the names C. dichotoma (Lour.) K. Koch and C. longifolia longissima Hemsl. The H. H. Bartlett 6082 collection, in fact, was

originally distributed as C. longifolia longissima Hemsl., then "corrected" to C. longissima (Hemsl.) Merr., and then to C. longifolia f. floccosa Schau.

In all, 19 herbarium specimens and 1 mounted photograph of C. randaiensis have been examined by me.

Citations: CHINA: Kwangtung: C. O. Levine s.n. [Herb. Canton Chr. Coll. 743] (W—779015). FORMOSA: H. H. Bartlett 6053 (Mi, N, W—1248412), 6082 (Mi, W—1248439); Gressitt 315 (N, S), 349 (N), 374 (N); Huang 1812 (Lb—48288); Kanehira 2878 (N, W—1671955); Kao 4176 (Mi); Kawakami & Mori 7023 (W—photo); Matuda 286 (Ca—345486); Ohwi 3533 (Ba); E. H. Wilson 10108 (W—1052933, W—1052934), 19848 (W—1053031).

CALLICARPA RANDAIENSIS var. KOREANA Moldenke, Phytologia 8: 57. 1961.

Bibliography: Moldenke, Phytologia 8: 57. 1961; Moldenke, Résumé Suppl. 3: 18. 1962; Hocking, Excerpt. Bot. A.5: 45. 1962; Moldenke, Biol. Abstr. 37: 1062. 1962; Moldenke, Phytologia 14: 167. 1966.

This variety differs from the typical form of the species in having its leaves thin-membranous, very small, 2—4.5 cm. long, 7—14 mm. wide, narrowly elliptic, long-acuminate at the apex, cuneate-acuminate at the base, finely appressed-serrulate from below the middle to the base of the terminal acumination, and glabrous on both surfaces.

The type of the variety was collected by Hyon Pia Chong at Wan-Do, Korea, on October 29, 1950, and is deposited in the herbarium of the University of California at Berkeley. The Korean vernacular name for the plant is said to be "chhom-chaksal-namu". The type collection was originally misidentified and distributed as C. dichotoma (Lour.) K. Koch.

In all, only 2 herbarium specimens, including the type, have been seen by me of this variety.

Citations: KOREA: Chong s.n. [Wan-Do, 29th October 1950] (Ca—998287—type, Z—isotype).

CALLICARPA REMOTISERRULATA Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 223—224. 1911.

Synonymy: Callicarpa remotiserrata Hayata apud J. Matsum., Ind. Pl. Jap. 2 (2): 530, sphalm. 1912. Callicarpa remotiserralata Chang, Act. Phytotax. Sin. 1: 270, sphalm. 1951. Callicarpa remotiflora Lin & Wang, Bot. Bull. Acad. Sin. 8: 185—186, 188, & 190, fig. 3, 4, & 6. 1967.

Bibliography: Hayata, Journ. Coll. Sci. Univ. Tokyo 30 (1): [Mater. Fl. Formos.] 223—224. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; Prain, Ind. Kew. Suppl. 5, pr. 1, 43. 1921; T. Itô, Taiwan Shokubutu Dzusetu [Illustr. Formos. Pl.], ed. 1, 7 & 604 (1927) and ed. 2, 7 & 604. 1928; S. Sasaki, List Pl. Formos. 350. 1928; Kanehira, Formos. Trees, ed. 2, 647—648 & 716, fig.

604. 1936; Moldenke, Prelim. Alph. List Invalid Names 12. 1940; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 57 & 87. 1942; Moldenke, Alph. List Cit. 2: 602. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 133 & 178. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 300, 307, 311, & 312. 1951; Moldenke, Résumé 172, 246, & 444. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: 1212, pl. 1020. 1962; Li, Woody Fl. Taiwan 818, 819, 823--824, & 944. 1963; Lin & Wang, Bot. Bull. Acad. Sin. 8: 185--186, 188, & 190, fig. 3, 4, & 6. 1967; Moldenke, Résumé Suppl. 17: 8. 1968.

Illustrations: Kanehira, Formos. Trees, ed. 2, 648, fig. 604. 1936; Liu, Illustr. Nat. & Introd. Lign. Pl. Taiwan 2: pl. 1020. 1962; Lin & Wang, Bot. Bull. Acad. Sin. 8: 188 & 190, fig. 3, 4, & 6. 1967.

An erect shrub, to 2 m. tall; branches and branchlets terete, gray to brownish, covered with stellate-tomentose hairs, the branches rugulose with prominent ridges, the branchlets sometimes very sparingly pubescent or glabrate; leaves opposite; petioles about 6 mm. long, sulcate above, very shortly stellate-tomentose; leaf-blades chartaceous, obovate or elliptic to lanceolate or oblong-lanceolate, 4--12 cm. long, 2--3.5 cm. wide, acute to acuminate at the apex, remotely mucronate-serrate along the margins, entire near the apex and base, acuminate or cuneate-attenuate at the base, green above, pale-green beneath, paler on both surfaces in drying or sometimes darkening above, both surfaces glabrous or covered with stellate hairs and very sparsely yellow-punctate, with a larger impressed gland at the base above, the midrib and veins slightly elevated on both surfaces or prominent beneath, the teeth mucronate, about 0.5 mm. long and wide, obtuse at the apex, about 5 mm. apart; secondaries 5--7 pairs, slightly elevated on both surfaces; cymes axillary and terminal, opposite, 2--3 times as long as the subtending petiole; calyx campanulate or campanulate-cupuliform, 2 mm. long, 1.8 mm. wide, covered with dense stellate hairs, the rim irregularly and obscurely 4-toothed; corolla white, tubular, 3.5 mm. long, stellate-hairy on the outside, glabrous inside, the limb 4-lobed, the lobes rounded at the apex; stamens 4, exserted, inserted at the base of the corolla-tube; filaments filiform, 3.5--5 mm. long; anthers oblong, 1.5 mm. long; ovary globose, 1 mm. in diameter; style filiform, 5 mm. long; stigma depressed-capitate; drupes globose, about 6--7 mm. in diameter, purple at maturity, glabrous, with 4 or 5 seeds; seeds flattened, reniform.

The type of C. remotiserrulata is G. Nakahara 619, collected at Botanrosha, Kōshūn, Formosa, in 1906, while that of C. remotiflora is J. L. Wang 5401 from Shouchia, at 460 meters altitude, Formosa, collected in September, 1965. Common names recorded for the plant are "Hengchun beauty-berry", "kôsyun-murasaki", and "Taiwan-murasaki". Kanehira's surname is sometimes misspelled "Kanebira" on some labels.

Chang (1951) cites only a no. 21027 from Formosa, but the col-

lector or herbarium name is, unfortunately, given only in Chinese characters. Li (1963) cites Nakahara 619 and Suzuki 6086 from Formosa; Lin & Wang (1967) cite a C. E. Chang s.n. from the same island.

In all, 2 herbarium specimens and 4 mounted photographs, including a purported phototype, have been examined by me.

Citations: FORMOSA: Kanehira s.n. [Hiiran-san, 8.XII.1918] (N—photo, Ph, W--photo, Z--photo); Nakahara 919 [Herb. Govt. Formosa 21025] (W--photo of type); Yamada s.n. [April 1934] (S).

CALLICARPA RESINOSA Wright & Moldenke ex Moldenke in Fedde, Repert. Sp. Nov. 33: 142--143. 1933.

Synonymy: Callicarpa resinosa Wright ex Moldenke in Fedde, Repert. Sp. Nov. 40: 78, in textu. 1936; Alain in León & Alain, Fl. Cuba 4: 306. 1957.

Bibliography: Moldenke in Fedde, Repert. Sp. Nov. 33: 142--143 (1933), 39: 298 (1936), and 40: 56, 57, 73, 75, 77--80, 119, & 131. 1936; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24 & 87. 1952; Moldenke, Alph. List Cit. 1: 310 (1946), 2: 420 (1948), and 4: 1079, 1144, & 1157. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 42 & 178. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; Alain in León & Alain, Fl. Cuba 4: 304 & 306. 1957; Moldenke, Résumé 50, 246, & 445. 1959.

Collectors have encountered this species in anthesis and fruit in April and November and report the vernacular name "filigrana". José P. Carabia has stated to me personally that it is rather certain that the type collection, previously cited by me as questionably from Oriente, Cuba, actually came from the province of Pinar del Río, on the opposite end of the island. It should also be noted here that I am now of the opinion that this species may actually be the same as what is now passing as C. fulva var. glabrescens Moldenke. More careful comparison of the specimens involved, together with exhaustive field work, is indicated. Material of C. resinosa has been distributed in some herbaria under the tentative designation of "C. ferruginea var."

In all, 22 herbarium specimens of C. resinosa, including the type, and 20 mounted photographs have been examined by me.

Additional & emended citations: CUBA: Oriente: Acuña 12688 (Es, W--1881245). Pinar del Río: C. Wright 3171 [Herb. Sauvalle 1774] (E--119138--isotype, F--photo of isotype, F--244617--isotype, Hv--isotype, Hv--isotype, Hv--isotype, N--photo of isotype, Si--photo of isotype, Z--photo of isotype), 3171a (F--244616).

CALLICARPA RETICULATA Sw., Prodr. 31. 1788.

Synonymy: Callicarpa foliis elliptico-lanceolatis subserratis rugosis subtus tomentoso-incanis Sw. ex Willd., Linn. Sp. Pl. 1: 620, in syn. 1797.

Bibliography: Sw., Prodr. 31. 1788; J. F. Gmel. in L., Syst.

Nat., ed. 13, pr. 1, 2: 246 (1789) and pr. 2, 2: 246. 1791; Sw., Fl. Ind. Occ. 1: 252. 1797; Raeusch., Nom. Bot. 37. 1797; Willd., Linn. Sp. Pl. 1: 620. 1797; Pers., Syn. Pl. 1: 133. 1805; Poir. in Lam., Encycl. Méth. Suppl. 2: 33. 1811; Roem. & Schult. in L., Syst. Veg., ed. 15 nov., 3: 95--96. 1818; Steud., Nom. Bot., ed. 1, 137. 1821; Roth, Nov. Pl. Sp. 82. 1821; Spreng. in L., Syst. Veg., ed. 16, 1: 420. 1825; Ainslie, Mat. Ind. 2: 181. 1826; Spreng. in L., Syst. Veg., ed. 16, 5: 126. 1828; D. Dietr., Syn. Pl. 1: 429. 1839; Steud., Nom. Bot., ed. 2, 257. 1840; Pers., Sp. Pl. 1: 343. 1842; Walp., Repert. 4: 131. 1845; Schau. in A. DC., Prodr. 11: 642. 1847; Sagra, Hist. Cuba 2 (11): 145. 1850; Jacques & Hérincq, Man. Gén. Pl. Arb. & Arbust. [Fl. Gen. Eur. 3:] 502. 1851; Griseb., Fl. Brit. West Ind. 499. 1861; Bocq., Adansonia 3: [Rév. Verbenac.] 192. 1863; Griseb., Cat. Pl. Cub. 216. 1866; Sauvalle, Fl. Cub. 113. 1868; G. W. Johnson, Gard. Dict. 157. 1890; Fawcett, Prov. List Indig. Nat. Flow. Pl. Jamaica 30. 1893; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; Briq. in Engl. & Prantl, Nat. Pflanzenfam., ed. 1, 4 (3a): 166. 1895; Garcia Cañizares, Fl. Cub. 69. 1901; Urb., Symb. Ant. 5: 485 & 486. 1908; Britton & P. Wils., Scient. Surv. P. R. & Virg. Isls. 6 (1): 147. 1925; Moldenke in Fedde, Repert. Sp. Nov. 39: 299 (1936), 40: 49, 69, 70, 80--83, 120, 130, & 131 (1936), and 42: 238, 242, & 243. 1937; Moldenke, Alph. List Common Vern. Names 23. 1939; Moldenke, Geogr. Distrib. Avicenn. 6. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 25 & 87. 1942; Moldenke, Phytologia 2: 95. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Alph. List Cit. 4: 982 & 1145. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 46 & 178. 1949; Roig y Mesa, Dicc. Bot. 2: 389, 390, & 996. 1953; Moldenke, Résumé 54 & 445. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Moldenke, Phytologia 14: 149--151. 1966; Moldenke, Résumé Suppl. 14: 6. 1966.

Sprengel (1825) asserts that this species is native to Jamaica and Hispaniola, but I have not as yet seen any material of it from Hispaniola -- and this in spite of the intensive exploratory work being done on this island by my friend, Alain Liogier. Bocquillon (1863) records it from St. Thomas, but his "record" doubtless refers to C. ampla Schau. Sagra, Grisebach, Sauvalle, Garcia Cañizares, and other authors record it from Cuba, but all these references are doubtless to the closely related C. cubensis Urb.

My very good friend, William T. Stearn, in a letter to me dated March 4, 1960, says "In Fedde, Repert. 40: 82 (1936) you say that the type of Callicarpa reticulata Swartz 'was collected by O. P. Swartz in Jamaica'. Swartz placed, however an asterisk against his diagnosis, which, as indicated in his preface, means that this was not based on a specimen of his own gathering but on material from the West Indies which he found in the herbarium of Sir Joseph Banks (now in the British Museum (Natural History) London). In his Flora Indiae Occidentalis 1: 253 (1797) he even says "Species haecce, cujus descriptionem mihi praebuerunt speci-

mina in Museo Banksiano'. These specimens were gathered by W. Wright, F. Masson and H. de Ponthieu. You then state that 'no material of the type collection has thus far been available for examination' but presumably from the close agreement between Swartz's description and a W. Wright specimen in the British Museum (Nat. Hist.) you consider the latter 'to represent the true C. reticulata'. This is a fortunate opinion, because there can be no doubt that these Wright specimens are in fact the type-collection! Your description thus unknowingly gives a good modern account of the type."

The C. F. Baker 5126, distributed as C. reticulata, is, of course, like all other Cuban material so determined, actually C. cubensis Urb.

In all, 3 herbarium specimens of C. reticulata, including the type, have been examined by me.

Additional & emended citations: JAMAICA: W. Wright s.n. [1783] (Bm--type, Ed--isotype, N--isotype).

CALLICARPA REVOLUTA Moldenke in Fedde, Repert. Sp. Nov. 33: 143. 1933.

Bibliography: Moldenke in Fedde, Repert. Sp. Nov. 33: 143 (1933), 39: 299 (1936), and 40: 56, 73, 74, 78, 119, & 129. 1936; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24 & 87 (1942) and [ed. 2], 43 & 178. 1949; Moldenke, Alph. List Cit. 3: 929 (1949) and 4: 1035. 1949; Alain in León & Alain, Fl. Cuba 4: 305 & 307. 1957; Moldenke, Résumé 50 & 445. 1959; Moldenke, Phytologia 14: 155. 1966.

In all, 3 herbarium specimens of C. revoluta, including the type, and 6 mounted photographs have been examined by me.

Emended citations: CUBA: Oriente: Shafer 8308 (W--696508--isotype).

CALLICARPA RIDLEYI S. Moore, Journ. Bot. Lond. 63: Suppl. 80. 1925.

Bibliography: S. Moore, Journ. Bot. Lond. 63: Suppl. 80. 1925; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 64 & 87. 1942; H. N. & A. L. Moldenke, Pl. Life 2: 78. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 144 & 178. 1949; Moldenke, Résumé 189 & 445. 1959.

Moore (1925) describes this species as "Arbor; ramulis tetragonis brunneo-farinoso-tomentosis dein glabris; foliis petiolo farinoso ± 2 cm. long. insidentibus ellipticis caudato-acuminatis (acumine circa 1.5 cm. long.) apice mucronatis basi breviter cuneatis margine integris papyraceis supra pilis sparsis minutis stellatis inspersis deinde glabris subtus minute farinoso plerisque 11--15 x 4--6 (raro 8) cm. costis lateralibus utrinque 10 pag. inf. (uti costulae et reticulum) prominentibus; cymis petiolos tandem excedentibus in fructu 7.5 x 6 cm. in florae 3.5 x 3 cm. plurifloris uti pedicelli calycesque farinosis; pedicellis ± 1.5 mm. long.; calyce denticulato 1.5 mm. long.; corollae extus

minute tomentosae tubo 2.5 mm. long. lobis ovato-oblongis obtusis 1.5 mm. long.; antheris fere 2 mm. long.; drupa depresse globosa 3--4 mm. diam."

The type of the species was collected by Henry Ogg Forbes (no. 272) at an altitude of 2000--2700 feet, at Pasir Orai, Bantam, Java, and is probably deposited in the herbarium of the British Museum (Natural History) in London. Moore notes that "The fruit is described from a specimen at the Museum collected by Mr. Ridley on Mt. Salak."

Nothing further is known to me of this species.

CALLICARPA RIVULARIS Merr., Philip. Journ. Sci. Bot. 7: 340--341. 1912.

Synonymy: Callicarpa angusta var. longifolia H. J. Lam, Verbenac. Mal. Arch. 66 & 67. 1919. Callicarpa angusta var. β H. J. Lam, Verbenac. Mal. Arch. 67. 1919. Callicarpa erioclona var. typica f. rivularis (Merr.) Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 19. 1921.

Bibliography: E. D. Merr., Philip. Journ. Sci. Bot. 7: 340--341. 1912; H. J. Lam, Verbenac. Mal. Arch. 48, 66--68, & 362. 1919; Prain, Ind. Kew. Suppl. 5, pr. 1, 43. 1921; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 19. 1921; E. D. Merr., Enum. Philip. Flow. Pl. 3: 387--388. 1923; Moldenke, Prelim. Alph. List Invalid Names 9 & 10. 1940; Moldenke, Alph. List Invalid Names 8 & 9. 1942; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 62 & 87 (1942) and [ed. 2], 141 & 178. 1949; Moldenke, Résumé ç83, 241, 243, & 445. 1959; Prain, Ind. Kew. Suppl. 5, pr. 2, 43. 1960; Moldenke, Phytologia 14: 179 (1966), 15: 15 (1967), and 21: 330. 1971.

Shrub, apparently sometimes subscandent, 2--5 m. tall; branches terete or the ultimate ones somewhat compressed, along with the branchlets very densely covered by a whitish or yellowish-white indumentum composed of short stellate hairs with some stellate-plumose ones intermixed; branchlets slender; leaves decussate-opposite; petioles 0.5--1.8 cm. long, densely stellate-tomentose with yellowish-white hairs; leaf-blades chartaceous, lanceolate or narrow-lanceolate to narrowly lanceolate-obovate or narrowly oblanceolate, 7--20 cm. long, 1.5--4 cm. wide, equally narrowed and attenuate-acute at both ends or slenderly acuminate at the apex, serrate or very minutely repand-dentate along the margins except at the base and apex or slightly and irregularly denticulate above and entire on the lower half, dark and quite glabrous above when dry or with a few stellate hairs along the midrib, densely whitish-tomentose beneath with a dense sometimes yellowish-white indumentum; secondaries about 9 pairs, arcuate-ascending, prominent beneath, anastomosing; vein and veinlet reticulation abundant but obscure; inflorescence densely stellate-tomentose with yellowish-white hairs; cymes axillary, solitary, about 3 cm. wide or less, dichotomously branched, rather lax, comparatively few-flowered; peduncles about as long as the sub-

tending petiole; calyx somewhat infundibular, about 2 mm. long, extremely densely white- or grayish-puberulent to appressed-lanate or densely stellate-hairy on the outer surface, the rim slightly 4-toothed; corolla white, about 3 mm. long, somewhat puberulent on the outside, the tube scarcely exserted, the limb 4-lobed, slightly pubescent or stellate-pilose externally; anthers 1.3 mm. long, glandulose on the back; drupes globose, about 3 mm. wide, glabrous, with 4 pyrenes.

The type of this species (as well as of Lam's C. angusta var. longifolia) was collected by Frederick William Foxworthy [Herb. Philip. Bur. Sci. 660] on rocky riverbanks, at about 1150 meters altitude, on Mount Victoria, Palawan, Philippine Islands, on March 23, 1906, and was deposited in the herbarium of the Philippine Bureau of Science, now destroyed. Merrill (1912) cites also another Foxworthy collection, Herb. Philip. Bur. Sci. 719, gathered on March 24, 1906, at apparently the same locality, making it a topotype. Bakhuizen van den Brink (1921) cites these collections as Foxworthy 660 & 719 and cites no other material.

Lam (1919) comments in his discussion of C. angustifolia King & Gamble that "This species has a close affinity with C. angusta var. β [i.e., var. longifolia] and perhaps it will appear that it is synonimous with it. But it seems to differ from it by the pubescent corolla and the hardly denticulate leaves". Merrill (1912) says of C. rivularis: "A species manifestly very closely allied to Callicarpa angusta Schauer, differing especially in its indumentum". Bakhuizen van den Brink (1921) reduces it to form rank under C. erioclona Schau.

Callicarpa rivularis has been collected in flower and fruit in March and April. Material has been misidentified and distributed in herbaria as C. angusta Schau. and the two Foxworthy collections were actually so cited by me in a previous installment of these notes.

In all, 6 herbarium specimens of C. rivularis, including the type collection, have been examined by me.

Citations: PHILIPPINE ISLANDS: Palawan: Foxworthy s.n. [Herb. Philip. Bur. Sci. 660] (Bz--17595--isotype, N--isotype), s.n. [Herb. Philip. Bur. Sci. 719] (Bz--17594, N, W--627037, Z).

CALLICARPA ROIGII Britton, Bull. Torrey Bot. Club 53: 463. 1926.

Synonymy: Callicarpa melanocarpa C. Wright ex Moldenke in Fedde, Repert. Sp. Nov. 40: 46, in syn. 1936. Callicarpa polyantha C. Wright ex Moldenke in Fedde, Repert. Sp. Nov. 40: 46, in syn. 1936.

Bibliography: Griseb., Cat. Pl. Cub. 216. 1866; N. L. Britton, Bull. Torrey Bot. Club 53: 463. 1926; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke in Fedde, Repert. Sp. Nov. 39: 301 (1936) and 40: 41, 45--46, 77, 119, 128, & 131. 1936; Moldenke, Alph. List Common Vern. Names 12. 1939; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Prelim. Alph. List Invalid Names 12. 1940;

Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24 & 87. 1942; Moldenke, Alph. List Invalid Names 10. 1942; Moldenke, Phytologia 2: 95. 1945; Moldenke, Alph. List Cit. 1: 3 & 310. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 38. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 79. 1948; Moldenke, Alph. List Cit. 2: 420 & 648 (1948), 3: 867 & 868 (1949), and 4: 1020, 1047, & 1144. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 43 & 178. 1949; H. N. & A. L. Moldenke, Anal. Inst. Biol. Mex. 20: 4. 1950; Alain in León & Alain, Fl. Cuba 4: 304 & 306. 1957; Moldenke, Résumé 50, 245, 246, & 445. 1959; Moldenke, Phytologia 13: 433. 1966; J. A. Clark, Card. Ind. Gen. Sp. Pl. n.d.

Recent collectors describe this plant as a shrub, 3--4 m. tall, growing along roadsides, flowering in April, and fruiting in January. They record the vernacular variant "filigrana del pinar". Since the plant is also known as "filifrana fruto blanco", one may assume that its mature fruits are white, although all that I have seen (in the dried state) were black.

In all, 32 herbarium specimens of C. roigii, including the types of all the names involved, and 14 mounted photographs have been examined by me.

Additional & emended citations: CUBA: Pinar del Río: Acuña & Roig 10871 (Es); Acuña & Zayas 19932 (Z); León 15415 (Ha, N); J. T. Roig 3220 (Ha--isotype, W--1147111--isotype), 19871 (Es), s.n. [April 11, 1924] (Es); C. Wright 231/8 [Herb. Sauvalle 1773] (Hv), 2169 (F--244614), 3169 [Herb. Sauvalle 1773] (E--119136, Hv, Pa, W--56139).

CALLICARPA RUBELLA Lindl.

Additional & emended synonymy: Callicarpa sessilifolia Wall., Numer. List "49" [=50], hyponym. 1829. Callicarpa tenuiflora Champ. ex Benth. in Hook. Journ. Bot. & Kew Gard. Misc. 5: 135. 1853. Callicarpa lasiantha Lemaire ex Lemaire & Verschaf., Ill. Hort. 6: sub pl. 202, in obs. 1859; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938. Callicarpa purpurea Hort. Angl. & Lindl. ex Lemaire & Verschaf., Ill. Hort. 6: pl. 202, nom. provis. 1859 [not C. purpurea Hort. ex Moldenke, 1941, nor A. L. Juss., 1806, nor Nakai, 1923]. Callicarpa purpurea Hort. ex Regel, Gartenfl. 9: 56. 1860. Callicarpa violacea Hérincq, Hort. Franç. 3 (2): 11. 1861. Callicarpa japonica Hort. ex Pritzel, Icon. Bot. Ind. 2: 55. 1866 [not C. japonica Hort. ex Moldenke, 1936, nor L. f., 1966, nor Matsum., 1923, nor Miq., 1927, nor Thunb., 1784, nor Thunb. auct. ex Raf., 1838]. Callicarpa purpurea? Van Houtte ex Rehd. in C. S. Sarg., Pl. Wils. 3: 390, in syn. 1916. Callicarpa violacea Korth. ex H. J. Lam, Verbenac. Mal. Arch. 53, in syn. 1919. Callicarpa purpurea Van Houtte apud P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 38, in syn. 1932. Callicarpa cuspidata Bakh. (in part) apud P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 38, in syn. 1932 [not C. cuspidata Hassk.,

1921, nor Lam & Bakh., 1951, nor Roxb., 1814]. Callicarpa rubella f. crenata P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 40. 1932. Callicarpa rubella f. angustata P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 40. 1932. Callicarpa rosea Lindl. ex Moldenke in Fedde, Repert. Sp. Nov. 40: 103, in syn. 1936.

Bibliography: Gaertn., Fruct. & Sem. Pl. 2: pl. 94. 1791; Lindl., Bot. Reg. 11: pl. 883. 1825; Spreng. in L., Syst. Veg., ed. 16, 4 (2): 41 (1827) and ed. 16, 5: 126. 1828; Wall., Numer. List "49" [=50]. 1829; D. Dietr., Syn. Pl. 1: 428. 1839; Steud., Nom. Bot., ed. 2, 257. 1840; Walp., Repert. 4: 130. 1845; Schau. in A. DC., Prodr. 11: 645. 1847; Jacques & Hérincq, Man. Gén. Pl. Arb. & Arbust. [Fl. Jard. Eur. 3:] 503. 1851; Benth. in Hook. Journ. Bot. & Kew Gard. Misc. 5: 135. 1853; Van Houtte, Fl. des Serres 30 [ser. 2, 13]: 127--128, pl. 1359. 1858; Lemaire & Verschaf., Ill. Hort. 6: pl. 202. 1859; Groenland, Rev. Hort. 8 (4): 106—108, fig. 24 & 25. 1859; Lindl., Gard. Chron. 1859: 96. 1859; C. Müll. in Walp., Ann. 5: 709. 1860; Regel, Gartenfl. 9: 56. 1860; Benth., Fl. Hongk. 270. 1861; Hérincq, Hort. France 3 (2): 11, pl. 4. 1861; Regel, Gartenfl. 12: 101. 1863; Pritzel, Icon. Bot. Ind. 1: 188 (1866) and 2: 55. 1866; M. T. Masters, Gard. Chron. 1871: 173, fig. 38. 1871; S. Kurz, Forest Fl. Brit. Burma 2: 274--275 & 589. 1877; Gamble, List Trees Darj. Dist. 60. 1878; Gamble, Man. Indian Timb., ed. 1, 282 & 503. 1881; W. Robinson, The Garden 23: 540, pl. 392. 1883; Nicholson, Ill. Dict. Gard. 1: 242. 1884; C. B. Clarke in Hook. f., Fl. Brit. Ind. 4: 569. 1885; Maxim., Bull. Acad. Sci. St. Pétersb. 31: 75. 1886; Maxim., Mél. Biol. 12: 504 & 506. 1886; G. Watt, Dict. Econom. Prod. India 2: 27. 1889; Forbes & Hemsl., Journ. Linn. Soc. Lond. Bot. 26 [Ind. Fl. Sin. 2]: 255. 1890; N. E. Br. in G. W. Johnson, Gard. Dict. 157. 1890; Kuntze, Rev. Gen. Pl. 2: 503. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 1, 1: 386. 1893; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 1, 1: 156. 1902; Gamble, Man. Indian Timb., ed. 2, 525. 1902; Rehd. in L. H. Bailey & Mill., Cycl. Am. Hort. 1: 217. 1906; W. P. Wright in Cassell, Dict. Pract. Gard., ed. 2, 1: 156. 1907; S. T. Dunn, Journ. Linn. Soc. Lond. Bot. 38: 363. 1908; Dunn & Tutcher, Kew Bull. Misc. Inf. Addit. Ser. 10: 202 & 203. 1912; Elbert, Meded. Rijksherb. Leid. 12: 15. 1912; Diels, Notes Roy. Bot. Gard. Edinb. 7: 332 & 334. 1913; H. J. Lam, Meded. Rijksherb. Leid. 37: 33. 1914; Rehd. in L. H. Bailey, Stand. Cycl. Hort. 2: 629. 1914; Rehd. in C. S. Sarg., Pl. Wils. 3: 369—370. 1916; Léveillé, Cat. Pl. Yun-Nan 277. 1917; E. D. Merr., Philip. Journ. Sci. 14: 249. 1919; H. J. Lam, Verbenac. Malay. Arch. 46, 53--54, 58, & 362. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 23. 1921; Stapf, Ind. Lond. 1: 526. 1929; P. Dop, Bull. Soc. Hist. Nat. Toulouse 64: 500, 501, 506, 511, & 512. 1932; P'ei, Sinensia 2: 67. 1932; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 16, 17, 35, 38--40, & 48. 1932; Grey & Hubbard, List Pl. Atkins Inst. 38. 1933; Rehd., Journ. Arnold Arb. 15: 323—324. 1934; Cotton in Curtis, Bot. Mag. 157: pl. 9340. 1934; L. H. Bailey, Cat. Florists Handl. Verbenac. n.p. 1935; Hand.-Mazz., Symb. Sin. 7: 901. 1936; Moldenke in Fedde,

Repert. Sp. Nov. 39: 297 & 300 (1936) and 40: 98, 102--104, 120, 123--125, & 128. 1936; Fletcher, Kew Bull. Misc. Inf. 1938: 412 & 414. 1938; A. W. Hill, Ind. Kew. Suppl. 9: 45 & 46. 1938; Moldenke, Geogr. Distrib. Avicenn. 36. 1939; Moldenke, Suppl. List Common Vern. Names 21. 1940; Moldenke, Prelim. Alph. List Invalid Names 10--13. 1940; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Biswas, Indian Forest Rec. Bot., new ser., 3: 41. 1941; Moldenke, Known Geogr. Distrib. Verbenac., ed. 1, 54--56, 58, 59, 63, 64, 66, 71, & 87. 1942; Moldenke, Alph. List Invalid Names 8--11. 1942; Moldenke, Phytologia 2: 70 & 95. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 2, 1: 386. 1946; Moldenke, Alph. List Cit. 1: 91, 119, 208, & 210. 1946; Hill & Salisb., Ind. Kew. Suppl. 10: 38. 1947; Moldenke, Phytologia 2: 343. 1947; Moldenke, Alph. List Invalid Names Suppl. 1: 3 & 28. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 63. 1948; Moldenke, Alph. List Cit. 2: 359, 404, 408, 434, 487, 563, 566, 601, 608, & 619 (1948), 3: 657, 727, 877, & 971 (1949), and 4: 1011. 1949; Moldenke, Phytologia 3: 139. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 124, 125, 128, 131, 135--137, 143, 144, 146, 157, & 178. 1949; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 358 & 359. 1951; H.-T. Chang, Act. Phytotax. Sin. 1: 270, 280, 281, 286, 288, 296--298, 302, & 311. 1951; Moldenke, Phytologia 4: 75 (1952) and 4: 191. 1953; Moldenke, Inform. Mold. Set. 51 Spec. 2. 1956; Anon., Kew Bull. Gen. Index 1929-56, p. 59. 1959; Moldenke, Résumé 159, 160, 165, 168, 174, 175, 177, 187, 189, 194, 214, 242--244, 246--248, 379, & 445. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., pr. 3, 1: 386. 1960; Panigrahi & Naik, Bull. Bot. Surv. India 3: 376. 1961; Deb, Bull. Bot. Surv. India 3: 314. 1961; Srinivasan & Agarwal, Bull. Bot. Surv. India 5: 86. 1963; Moldenke, Dansk Bot. Arkiv 23: 87. 1963; Backer & Bakh., Fl. Java 600--601. 1965; R. E. & C. R. Harrison, Know Your Trees 39, pl. 93. 1965; Matthew, Bull. Bot. Surv. India 8: 164. 1966; Panigrahi & Joseph, Bull. Bot. Surv. India 8: 143 & 151. 1966; Moldenke, Résumé Suppl. 14: 3. 1966; Moldenke, Phytologia 14: 52, 102, 105, 106, 142, 143, & 148 (1966) and 14: 222, 225, & 249. 1967; Tingle, Check List Hong Kong Pl. 38. 1967; Moldenke, Phytologia 15: 30 (1967) and 16: 364 & 366. 1968; Moldenke, Résumé Suppl. 16: 9 & 13 (1968) and 17: 7. 1968; El-Gazzar & Wats., New Phytol. 69: 460, 483, & 485. 1970; Moldenke, Phytologia 21: 33, 49, 102, 103, 109, 152, 158, 163, 164, 225, 331, 334, 346, & 387. 1971.

Illustrations: Gaertn., Fruct. & Sem. Pl. pl. 94. 1791; Lindl., Bot. Reg. 11: pl. 883 (in color). 1825; Van Houtte, Fl. des Serres 30 [ser. 2, 13]: 127 & 128, pl. 1359 (in color) [as "C. purpurea"]. 1858; Groenland, Rev. Hort. 1859: 106 & 107, fig. 24 & 25. 1859; Lindl., Gard. Chron. 1859: 96. 1859; Lemaire & Verschaf., Ill. Hort. 6: pl. 202 [as "C. purpurea"]. 1859; Regel, Gartenfl. 9: 56 [as "C. purpurea"]. 1860; Hérincq, Hort Franç. 3 (2): 11, pl. 4. 1861; M. T. Masters, Gard. Chron. 1871: 173, fig. 38. 1871; W. Robinson, The Garden 23: 540, pl. 392. 1883; Cotton in Curtis, Bot. Mag. 157: pl. 9340 (in color). 1934; R. E. & C. R. Harrison, Know Your Trees pl. 93 (in color). 1965.

It should be noted here that the C. cuspidata accredited to Hasskarl in the synonymy above is actually a synonym of C. longifolia Lam., that accredited to Lam & Bakhuizen van den Brink is C. longipes Dunn, that ascribed to Roxburgh is C. pedunculata R. Br., and that credited to Bakhuizen van den Brink alone is in part C. rubella Lindl. and in part C. longipes Dunn; the C. japonica credited to "Hort. ex Moldenke" and to Linnaeus the younger is a synonym of C. japonica Thunb., a valid species, that credited to Matsumura and to Miquel is C. japonica var. luxurians Rehd., and that credited to "Thunb. auct. ex Raf." is C. longifolia Lam.; the C. purpurea of Jussieu is C. dichotoma (Lour.) K. Koch, while that attributed to "Hort. ex Moldenke" is C. longifolia Lam. and that ascribed to Nakai is C. japonica Thunb.

Recent collectors describe C. rubella as a large, slender, or straggling shrub, 1--5 m. tall, bushy, diffuse, "fern-branched", or a small tree, the leaves light-green, viscous above, the pedicels purple, the buds white, the flowers fragrant or slightly fragrant, the calyx stellate-tomentose, the anthers golden-yellow, the ovary pubescent, and the fruit at first green, later bright-blue or lilac to purplish-red or purple. Rock mistakenly refers to the drupes as "berries".

The species has been found growing on coral reefs, in semi-shade, in woods, forests, evergreen forests, densely shaded mixed woods, or thickets, in ravines and open ravines, and along valley roadsides or roadsides in general, at altitudes from sealevel to 2330 meters, flowering in March and from May to November, fruiting from July to January.

Deb (1961) reports the species "frequent" on hills in Manipur, Panigrahi & Joseph (1966) say that it is "abundant" in the shrub layer in Nefa, Panigrahi & Naik (1966) found it to be "very common in the Subansiri Frontier Division", and Prain reports it common in jungles in the Naga Hills, India. Dee found it to be common in open pine forests in Thailand, while, in the same country, Amnak describes it as a common shrub by streams. In Yünnan, Chin, Rock calls it a "small common shrub", while in Kwangsi it was found by Tsang to be fairly common in roadside meadows and fairly common as scattered shrubs in dry clay and silt on rocky soil. The same collector in Tonkin found it "fairly common in thickets on dry clayey soil".

Common and vernacular names recorded for the species are "angro", "callicarpa rougeâtre", "callicarpe à fruits pourpres", "chaak tsai shue", "kap ts'ing", "nam lai phi sua", "pha", "sugroomook", "sugroo-mook", "sugrúmúk", and "suren". Hom reports that it serves as a drug plant in Kwangtung.

Watt (1889) tells us that C. rubella is "A small tree of the North-East Himalaya to the hills of Martaban", while Lam (1914) gives its distribution as "Punduah, Sikkim, Khasiah u. Jainteah; China; Sumatra; Java". Actually, it seems to grow from Pakistan and India to Thailand and Indochina, north to Hongkong and China,

and east to Sumatra, Krakatoa, Java, and Celebes. Bean (1951) avers that it was introduced into cultivation [in England] in 1821, while Bailey (1935) reports that it is handled for the horticultural trade by the Knap Hill nursery.

Lam (1919) says "We could not find the reason why C. rubella Lindl. should have the priority above C. sessilifolia Wall., but retained the first name, nevertheless, since we found that all authors use it." Actually, Wallich's name was published 10 years earlier than Lindley's, but without description, and therefore is invalid under the present rules of botanic nomenclature. Lam cites Wallich's binomial as having been published in "1828", but the page 50 on which it occurs was actually not issued until 1829. Lam also comments in regard to C. rubella: "Its affinity is, especially in regard with the flowers, with C. pedunculata, but its leaves are always cordate, subsessile and narrower, whilst its cymes are smaller, fasciculate, not widely dichotomous as in C. pedunculata". Bakhuizen van den Brink (1921) reduced C. rubella Lindl., C. sessilifolia Wall., and C. tenuiflora Champ. to synonymy under what he called C. cuspidata Roxb., while Fletcher (1938) reduces "C. cuspidata Roxb., in part" to the synonymy of C. rubella! Srinivasan & Agarwal (1963) reduce C. rubella to synonymy under what they call C. rosea Lindl.

Chang (1951) includes C. dielsii (Léveillé) P'ei, C. panduriformis Léveillé, C. rubella var. dielsii (P'ei) Li, C. rubella var. hemsleyana Diels, and Viburnum dielsii Léveillé in the synonymy of C. rubella. However, I regard C. rubella var. hemsleyana and C. rubella var. dielsii as valid varieties (with Viburnum dielsii and Callicarpa dielsii as synonyms of the latter), and C. panduriformis as a synonym of C. longipes Dunn.

Merrill (1919) tells us that C. brevipetiolata Merr. differs from C. rubella in that it has the lower surface of its leaf-blades completely covered with dense stellate-tomentose indumentum. Regel (1863) says "Callicarpa lanata Vahl. [Abgebildet im Botanical Magazine in Jahrgang 1861] (pag. 96 cum ic.). Ist identisch mit der in der Gartenflora 1860, pag. 56 erwähnten C. purpurea Hort. (Fl. des serres tab. 1359. Ill. hort. tab. 202). Vahls Name (Vahl. Symb. III. 13) als der älteste, ist der giltige. Stammt aus den tropischen Neuholland." However, I regard Vahl's C. lanata as a synonym of C. pedunculata R. Br., which is, indeed, native to Australia [=Neuholland], while C. rubella is not known from that continent. It is worth noting here that the illustrations given by Van Houtte (1858), Lemaire & Verschaffelt (1859), and Regel (1860) are all mis-labeled "Callicarpa purpurea" [a very different species, now known as C. dichotoma (Lour.) K. Koch] but truly represent C. rubella.

The corolla of C. rubella is described as "pink" on Dee 973, Hom 142, and W. T. Tsang 22497 & 29133, "mauve" on W. R. Sykes

202/64, "red" on Pitepool 19898 and Steward & Cheo 647, "maroon" on Levine & McClure 258/7177, "purplish" on Ching 5922, "purplish-rose" on Forrest 8393, and "white" on Chevalier 1708 and Ying 772.

Lindley (1825) says "This species of Callicarpa is well distinguished from all others of the genus by the peculiar outline of its leaves, which are sessile and approaching almost to panduriform, with a long taper point. It was brought from China, in 1822, for the Horticultural Society, by the late Mr. John Potts. Our drawing was made in the Chiswick Garden, in May last."

P'ei (1932) describes his f. angustata as follows: "Leaves thickly chartaceous, densely pubescent with stellate hairs, indumentum denser beneath, lanceolate oblong to oblanceolate-oblong, broadened above the middle, acuminate, base cordate, sessile, glandular on both surfaces, 8.5 cm. x 2 cm., 11.2 cm. x 4 cm., 11.7 cm. x 2.3 cm., 15 cm. x 4.4 cm. Peduncles 1 to 1.8 cm. long. Fruit 0.25 cm. in diameter." He does not designate a type, but bases the form on Forrest 7869 & 8393, A. Henry 2412, 9412, & 9412a, J. F. Rock 2915, 6932, & 7101, and Schneider 3191, all from Yünnan, China. He describes his f. crenata as having the "Leaves thin, chartaceous, densely pubescent with simple hairs, densely glandular on both surfaces, oblanceolate, cordate, apex acuminate, crenately serrate, 4.5 cm. x 1.2 cm., 6 cm. x 1.1 cm., 8.2 cm. x 2.5 cm. Peduncles 0.6 to 0.9 cm. long. Fruit 0.1 to 0.15 cm. in diameter." Again, he designates no type, but bases the form on R. C. Ching 1610 & 5922, Tsiang 1648, and Ying 772, 870, & 1155, all from (he says) Kwangsi, China. However, specimens of Ying 772 and 1155 which I have seen bear labels indicating that they were collected in Kwangtung.

The type of Callicarpa sessilifolia is Wallich 1837 from "Pundua". The Wallich, Numer. List "49" [=50] reference, where this binomial first occurs, is erroneously dated "1828" by some writers.

For C. violacea Korth. Lam (1919) says "see: Korthals. Verband over de Natuurl. Gesch. der Ned. O. I. bezittingen 1839--'42. Botanie: nomen nudum?", but I fail to find this binomial mentioned anywhere in this work.

Maximowicz (1886) cites Forbes s.n. and Wright s.n. from Hongkong, Sampson s.n. from "pluribus locis" in Kwangtung ("prov. Canton"), and "tum in Himalaya: Khasia! et Pendjab!" Forbes & Hemsley (1890) add a Champion s.n. from Hongkong and give the overall distribution of the species as "Sikkim, Khasia, and Jaintea mountains, India". Rehder (1916) cites C. Wright 380 and C. Ford s.n. from Hongkong and A. Henry 9412 & 9412a and C. Schneider 3161 from Yünnan, commenting "The Yünnan specimens agree with those from Hongkong except that the pubescence on the upper surface of the leaves is shorter and denser". P'ei (1932) cites for what he regards as the typical form of the species only Ford s.n., Wright s.n., and Chun 6544, all from Hongkong, with the

comment "Distribution: Formosa to Indo-China and reported from India and the Malay Archipelago. This differs from its allies by its obovate leaves which are sessile or subsessile and more or less cordate. Ovary glandular. Fruit 0.15 in diameter, densely pubescent when young. The species varies very much in its shape of leaves, length of peduncles and petioles."

Lam (1919) cites the following specimens seen by him: GREATER SUNDA ISLANDS: Buton: Elbert 2814. Java: Elbert 337 (Le--908.267-1141), s.n. [Nov. 1907] (Le--908.267-1142); Junghuhn s.n. [Ungarang, Medinie] (Le--908.267-1143). Sumatra: Korthals 5816.

Van Houtte (1858) describes the history of the species as follows: "C'est dans une des serres de notre collègue, M. Aug. van Geert, horticulteur en cette ville, que nous avons fait dessiner et peindre le modèle qui a servi à exécuter la planche ci-contre. Introduit en Angleterre par M. Standish, le Dr. Lindley suppose qu'il provient de l'un des voyages qu'a faits en Chine le célèbre voyageur, M. Fortune, auquel nous devons tant de reconnaissance pour le bien qu'il a fait à l'horticulteur! Dans ces derniers temps ne l'a-t-il pas presq'alimentée tout seul avec Lobb, en nous apportant de ces plantes impérissables, de ces végétaux fit for the million, dont on ne se lasse jamais et dont le commerce horticole tire tant de profit et les amateurs tant de jouissances vives et incessantes!

"Nous reproduisons aussi, comme pendant à notre dessin celui qu'en a donné le Gardeners' Chronicle. Mais cette plante, connue dans le commerce sous le nom de Callicarpa purpurea et que nous figurons ici, ne serait pas l'espèce dont elle porte le nom.....; ce nom de purpurea est donc tout provisoire, et l'indication da se patrie nous fait aussi défaut; il eût été aisé cependant de s'en enquérir auprès de M. Standish, si tant est que celui-ci s'inquiète de ces bagatelles.

"Quoi qu'il en soit, disons qu'ici la plante a gelé jusqu'a terre et qu'au printemps suivant elle a vigoureusement repoussé du pied, cela donne la mesure de son degré de rusticité. Donc, serre froide en Belgique, plein air, rusticité, plus au Sud. Fleurissant au commencement de l'été, elle est couverte vers l'automne de ses très nombreuses et très jolies baies d'un lilas purpurin qu'elle conserve pendant tout l'hiver. -- Sa multiplication par voie boutures, à défaut de graines, est des plus faciles."

Masters (1859) gives this account: "No plant excited more interest at the last autumn meeting of the Horticultural Society in St. James's Hall, than a little shrub from Mr. Standish, of Bagshot, loaded with the most beautiful shining deep violet berries. Few had seen such a species before, or suspected what it might be; the fact being that Callicarpa, the genus to which it belonged, has never before produced the beautiful fruit, from which its botanical name has been formed. The accompanying figure will convey a good idea of its general appearance.

"Not having seen the flowers or the old leaves, we are in some doubt to what species of Callicarpa it should be referred; and in

selecting that called purpurea we by no means overlook the possibility of its proving botanically distinct. In the form of the leaves, and the proportional size of the clusters of berries, it agrees very well; but the hairiness is that of C. rubella, quite a different plant. But these Callicarpas certainly vary much in hairiness at different periods of growth and under different circumstances. All that we can say for the present is that it seems to be a state of C. purpurea, the Porphyra dichotoma of Loureiro; but that it may possibly be the C. lasiantha. At all events it is a most interesting little greenhouse shrub, brought from China, we believe by Mr. Fortune. What makes it so extremely useful is that its berries retain their beautiful colour till long after Christmas. Some indeed now before us are as brilliant as they were in November."

Elbert (1912) cites Elbert 337; Diels (1913) cites Forrest 853; Panigrahi & Joseph (1966) cite Panigrahi & Joseph 14546 from Nefa; and Panigrahi & Naik (1961) cite Pitepool 19898 from the Subansiri Frontier Division of India.

Chang (1951) cites the following specimens as typical C. rubella: CHINA: Hunan: Chang 4560; S. C. Chen 1857, 2581; Ho 1159, 1428, 1623; Hsin 982; L. R. Li 276; Tseng, Chu, & Chang 10144; Yeh 253. Kiangsi: Chiang 10159; Mo 21151. Kwangsi: Chin 5681, 5922, 7189; Hsin 342, 634, 1716, 21428, 21623, 22213, 22429, 22436, 23133; Huang 39374, 40586; Li 81064; Liu 28769; Tseng 22497, 22744, 27598, 27922. Kwangtung: Canton Chr. Coll. Herb. 6968; Central Herb. 153539; Chang 44; H. Y. Chen 6531, 6544, 7049; L. H. Chen 41181, 41842; S. C. Chen 1686, 1797, 5633; Chiang 744; Hsin 10020; Huang 30716, 31283, 32474; Kao 52608, 52877; H. J. Liang 61865; S. H. Liang 84219, 84512, 84605; Liu 23959; Tseng 20762, 21319, 25640; Tso 20752. Kweichow: Tsiang 5315. Sikiang: Fang 6030. Szechuan: Fang 1272, 1636, 6286, 7821. Yünnan: Forrest 8393; Tsai 54215, 60238, 60479, 61437, 62224; Wang, Kao, & Liu 100060. CHINESE COASTAL ISLANDS: Hainan: Tso & Chen 43351. I regard Tsiang 5315 as var. hemsleyana Diels.

For what he considers to be C. rubella f. angustata Chang cites: CHINA: Kwangsi: S. C. Chen 3731, 91267; Hsin 25184; Kao 55899; Kwangsi Mus. Herb. 5446; Liang 65924; Soo 69035; Teng 13249; Tseng 24433. Kwangtung: Tsiang 1684; Tso 22416. Kweichow: Tsiang 4222. Sikiang: Handel-Mazzetti 5262. Yünnan: Forrest 7869; Tsai 54506, 54623, 54909, 56515, 56893, 59143, 60111, 60399, 60431, 60542, 60728, 62011, 62363; Tsiang 12300.

For what he considers to be C. rubella f. crenata Chang cites: CHINA: Hunan: Liang 519. Kwangsi: Hsin 1736, 25271; Huang 40762; S. K. Li 81055, 81086; Liang 66907, 69482, 69589; Liu 28507; Soo 69913; Tseng 22953, 23346, 26521, 26700; Tso 23653; Wang 150. Kwangtung: Central Herb. 67887; Chang 4373; Huang 37864, 38433;

Lin 9585; Tsiang 772, 870, 1155; Tso 22030, 22323.

It should be noted here that Rehder (1916) cites Walp., Ann. 5: 709 as published in "1858", when actually pages 641—966 of that volume did not appear in print until the year 1860.

Material of C. rubella has been misidentified and distributed in herbaria under the names C. dichotoma (Lour.) K. Koch, C. formosana Rolfe, C. longifolia Lam., C. reevesii Wall., C. rubella var. hemsleyana Diels, and Helicteris sp. On the other hand, the McClintock s.n. [Nov. 16, 1959], distributed as C. rubella, is actually C. bodinieri var. giraldii (Hesse) Rehd., Kingdon-Ward 17640 and Kuntze 5896 are C. brevipetiolata Merr., Teijsmann 8942 is C. caudata Maxim., Boden-Kloss 14464 is C. longifolia f. floccosa Schau., Rachmat 206 is C. pilosissima Maxim., and Keng 848, Weiss 1586, C. Wright s.n. [Hong Kong], and Ying 744 are C. rubella var. hemsleyana Diels.

In all, 95 herbarium specimens and 2 mounted photographs of typical C. rubella have been examined by me.

Additional citations: PAKISTAN: East Bengal: W. Griffith 6036 (S). INDIA: Assam: C. B. Clarke 44124D (W—803647); Prain s.n. [Kohima, 1886] (W--325385). Khasi States: Hooker & Thomson s.n. [Mont. Khasia 4000 ped.] (S, W—2496753); Schlagintweit 483 (W—804650). Madras: C. B. Clarke 14847 [601] (W--802500). West Bengal: Nasker 125 (We). BURMA: Upper Burma: Badal Khan 65 (Na—16189). CHINA: Kwangsi: R. C. Ching 5922 (Ca—409871, N, W—1248673); Steward & Cheo 647 (S); W. T. Tsang 22497 (S), 24433 (N). Kwangtung: Hom 142 [Herb. Lingnan Univ. 19450] (N); C. O. Levine s.n. [Herb. Canton Chr. Coll. 1449] (Ka--63121), s.n. [Herb. Canton Chr. Coll. 1610] (Ka--63268, W--874851); Levine & McClure 258/1777 [Herb. Canton Chr. Coll. 6968] (N, Ph, S, W--1248847); E. D. Merrill 10654 (Ca--992483, Gg--31977, N); Tsiang 870 (Ca--358868), 1684 (Ca--363144); Ying 772 (Ca--358025, N), 1155 (Bz--17562, Ca--358899). Kweichow: Tsiang 4222 (S), 5482 (N, W--1554977). Yünnan: Forrest 8393 (S); A. Henry 9412 (N, W—457035), 9412a (N, W--457035); J. F. Rock 2915 (W--1213239), 6932 (Ca--327229, W--1332127), 7101 (W--1511066). CHINESE COASTAL ISLANDS: Hainan: Chun & Tso 43351 (N). HONGKONG: W. Y. Chun 6544 (Ca--357945), 6551 (Ca--357945); Ringgold & Rodgers s.n. [Hongkong] (T). THAILAND: Amnak 39 [Herb. Roy. Forest Dept. 6023] (W--2064829); Dee 455 [Herb. Roy. Forest Dept. 7741] (Ss); J. F. Rock 133 (W--1171250); Smitinand 1671 [Herb. Roy. Forest Dept. 9557] (Z); Sørensen, Larsen, & Hansen 6229 (Bm). INDOCHINA: Annam: Chevalier 1708 (B, Ca--53971). Tonkin: Pételot 1629 (Ca--234336, N), 8580 (N); Tsang 29133 (Go). Province undetermined: Pételot 1523 [Phu Ha] (Ca--244155); Poilane 15598 (S). GREATER

SUNDA ISLANDS: Java: Junghuhn 3-4000 (K). Sumatra: Korthals 5816 (K), s.n. (K, K). CULTIVATED: England: Herb. Roy. Hort. Soc. s. n. [4.1.28] (Dm); Richardson s.n. [Liverpool Bot. Gard., Oct. 5, '89] (Ms--30945). Germany: Herb. Kummer s.n. [1865] (Mu--1442, N--photo, Z--photo). New Zealand: W. R. Sykes 202/64 (Nz--149622).

CALLICARPA RUBELLA var. DIELSII (Léveillé) Li, Journ. Arnold Arb. 25: 425--426. 1944.

Synonymy: Viburnum dielsii Léveillé in Fedde, Repert. Sp. Nov. 9: 443. 1911. Callicarpa dielsii (Léveillé) P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 37. 1932. Callicarpa dielsii P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 18. 1932. Callicarpa rubella var. hemsleyana f. subglabra P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 41. 1932. Callicarpa rubella var. subglabra (P'ei) Chang, Act. Phytotax. Sin. 1: 297. 1951.

Bibliography: Léveillé in Fedde, Repert. Sp. Nov. 9: 443. 1911; Léveillé, Fl. Kouy-Tchéou 66. 1914; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 16, 18, & 37--42. 1932; Rehd., Journ. Arnold Arb. 15: 323. 1934; A. W. Hill, Ind. Kew. Suppl. 9: 45. 1938; Moldenke, Prelim. Alph. List Invalid Names 49. 1940; Li, Journ. Arnold Arb. 25: 425--426. 1944; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 56 & 86. 1942; Moldenke, Alph. List Invalid Names 51. 1942; Moldenke, Phytologia 2: 343. 1947; Moldenke, Alph. List Invalid Names Suppl. 1: 3 & 28. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 56. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 131 & 178. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 281, 297, & 311. 1951; Moldenke, Phytologia 14: 102 (1966) and 21: 164. 1971.

Léveillé's original (1911) description of this taxon is "Planta tota villosa; rami hispido glandulosi, brunnei; folia 8--9 x 3--4 cm. fusco-viridia, subtus pallidiora, oblonga, caudato-acuminata, ad basin cordata, subsessilia crenata; nervis aliis patentibus elevatis, aliis rectis; flores corymbosi; pedunculi, pedicelli et calyces hispido-glandulosi; calyx urceolatus, vix crenatus; fructus nigrescens, primum inclusus, opacus, glaber."

P'ei comments (1932): "I have seen fragments of the type at the Arnold Arboretum. It appears to me to be closely related to Callicarpa longipes Dunn, the difference being the truncate calyx of Callicarpa Dielsii (Lévl.) P'ei while that of C. longipes Dunn. is toothed. When more abundant material is available it may be that this species will be found to be the same as some of the Kwangtung forms of Callicarpa rubella Lindl." He describes his C. rubella var. hemsleyana f. subglabra as follows: "A type recedit foliis subglabribus, obovatolanceolatis, subcordatis ad rotundatis, acuminatis. Chekiang: Chenchiong, 40 miles south of Siachu, Alt. 450 to 900 m., Ching 1760!, June 1924, 'Shrub, 6 feet tall, rare'. A shrub with subglabrous branchlets. Leaves obovatelanceolate, serrate, acuminate, base subcordate to rounded, sub-

glabrous on both surfaces, densely glandular beneath, sparsely glandular above, 7 to 18 cm. long, 3 to 4.7 cm. wide, chartaceous, lateral nerves about 8 on each side of the midrib. Petioles not exceeding 3 mm. in length. Cymes glabrous, glandular; peduncles glabrous, about 2.5 cm. long, slender. Calyx glabrous, glandular".

The type of Viburnum dielsii was collected by Pierre Julien Cavalerie (no. 385) at Pin-fa, Kweichow, China, on September 4, 1902. Li (1944) describes the taxon as "A glabrescent variety of the widely distributed species". Recent collectors describe it as a woody or semi-woody shrub, 1--2 m. tall, the leaves almost glabrous, the flowers fragrant, the corollas white, and the fruit yellow (when immature?) or black. It has been found growing in clay or sandy soil, along roadsides, at altitudes of 450--900 m., flowering in January, June to September, and November, and fruiting in July and August. While Ching calls it "rare" in Chekiang, Tsang refers to it as "fairly common scattered shrubs" in Kwangsi and "fairly common" in Kwangtung.

Li (1944) cites: CHINA: Chekiang: Chen 414, 793, 795; R. C. Ching 1760. Kweichow: Cavalerie 385; Teng 90440b. Kwangsi: W. T. Tsang 27598, 27922; Wang 39374, 40371. Kwangtung: W. T. Tsang 21319.

For what he regards as var. subglabra Chang (1951) cites the following: CHINA: Chekiang: R. C. Ching 1760. Hunan: Chang 4456. Kwangsi: Huang 40371.

Material has been misidentified and distributed in herbaria as C. brevipes (Benth.) Hance.

In all, 5 herbarium specimens of C. rubella var. dielsii have been examined by me.

Citations: CHINA: Chekiang: R. C. Ching 1760 (Ca--281529, W--1246638). Kwangsi: W. T. Tsang 27922 (W--1757337), 28598 (W--1757066). Kwangtung: W. T. Tsang 21319 (S).

CALLICARPA RUBELLA var. HEMSLEYANA Diels in Engl., Bot. Jahrb. 29: 547--548. 1900.

Synonymy: Callicarpa chaffanjoni Léveillé in Fedde, Repert. Sp. Nov. 9: 455, in obs. 1911. Callicarpa rubella hemsleyana Everett, Cat. Hardy Trees & Shrubs 16. 1942.

Bibliography: Diels in Engl., Bot. Jahrb. 29: 547--548. 1900; Léveillé in Fedde, Repert. Sp. Nov. 9: 455. 1911; Rehd. in C. S. Sarg., Pl. Wils. 3: 370. 1916; H. H. Chung, Mem. Sci. Soc. China 1 (1): 226. 1924; P'ei, Sinensia 2: 67. 1932; P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 16, 35, & 40--41. 1932; Rehd., Journ. Arnold Arb. 15: 323--324. 1934; Moldenke in Fedde, Repert. Sp. Nov. 40: 104. 1936; Moldenke, Prelim. Alph. List Invalid Names 10, 12, & 13. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 56 & 87. 1942; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; Moldenke, Alph. List Invalid Names 8, 10, & 11. 1942; P'ei, Bot. Bull. Acad. Sin. 1: 3--4. 1947; H. N. & A. L. Moldenke, Pl. Life 2: 53 & 63. 1948; Moldenke, Alph. List Cit. 4:

1011. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 131 & 178. 1949; Moldenke, Phytologia 4: 75 (1952) and 4: 191. 1953; Moldenke, Résumé 168, 174, 242, & 445. 1959; Moldenke, Phytologia 14: 52 (1966) and 21: 163, 164, & 331. 1971.

The original description of this taxon by Diels (1900) is "Foliis brevissime petiolatis demum supra sparse setulosis subtus glandulosis atque in nervis venisque sparse stellato-pilosis margine crenato-serratis serraturis quam eis typi magis distinctis. 2 m hohes Bäumchen mit 7,5 cm Stamm-Umfang. Blattspreite 10—12 x 4,5--5 cm. S Nan ch'uan; T'an chia wan, Wald (BvR 390 -- fr. Aug.!). Sehr auffallend durch die starke Reduction des Indumentes (die in Süd-China sich übrigens bereits anbahnt). Sonst von etwas stärkerer Serratur abgesehen kaum vom Typus (HB.) verschieden." The collector here referred to is Baron A von Rosthorn and the type locality is in Szechuan; the year of collection was 1891.

Rehder (1916) cites also Veitch Exped. 4318 from Szechuan and notes "This variety differs from the type of the species only in the slighter pubescence of the leaves and in their somewhat coarser serration. In Wilson's specimen, however, the under surface of the leaves is much more densely pubescent than in Rosthorn's specimen, but their dentation is much coarser and very unequal, the largest teeth being 6--8 mm. long and bearing from 1--3 small teeth near their base; the leaves measure up to 18 cm. in length and to 10 cm. in width."

P'ei (1932) cites: CHINA: Chekiang: Keng 848. Kwangtung: Chun 655; Tso 2072, 20752; Ying 744. Kweichow: Chaffanjon 2341; Laborde 2507. Szechuan: Fang 472, 1636, 6030, 6286; Rosthorn 390; E. H. Wilson, Veitch Exped. 4318. It should be noted, however, that the Chaffanjon 2341, which he cites, is the type collection of C. panduriformis Léveillé and this taxon has been reduced to synonymy under C. longipes Dunn. P'ei comments in regard to C. rubella var. hemsleyana: "This variety differs from its type by its less pubescent leaves and longer peduncles", saying nothing about the serration of the leaf-margins.

Recent collectors describe the plant as a small shrub, 1—2 m. tall, with yellow stamens, and have found it growing in the shade of woods or in light woods and open thickets, at altitudes of 500--900 meters, flowering from May to August, and fruiting in September and November. The corollas are described as "green creamy-white" on Keng 848, "lilac" on Veitch Exped. 4318, "purple" on Ying 744, and "pink" on Chun 655 and Tso 20752. Vernacular names recorded for the plant are "ku kai t'sz" and "sai ip un mat".

Material has been misidentified and distributed in herbaria under the names C. cuspidata Roxb. and C. giraldiana Pamp. On the other hand, the Liou 884, distributed as C. rubella var. hemsleyana, is actually C. longipes Dunn, while Tsiang 5482 is typical C. rubella Lindl.

In all, 11 herbarium specimens of this variety have been examined by me.

Citations: CHINA: Chekiang: Ching 2118 (W--1246183); Keng 848 (Ca--361844). Hunan: Fan & Li 572 (Bz--13601). Kwangtung: Herb. Canton Chr. Coll. 12560 (S); To & Tsang 12008 (S); Ying 744 (Ca--358024). Kweichow: Tsiang 5315 (S). HONGKONG: Ford s.n. (N); Weiss 1586(Bz--17563); C. Wright s.n. [Hong Kong] (W--9963). LOCALITY OF COLLECTION UNDETERMINED: A. Henry s.n. [Mt. Kellet, 28-6-93] (N).

CALLICARPA RUBELLA f. ROBUSTA P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 39. 1932.

Bibliography: P'ei, Mem. Sci. Soc. China 1 (3): [Verbenac. China] 39. 1932; Moldenke in Fedde, Repert. Sp. Nov. 40: 103 & 104. 1936; Moldenke, Prelim. Alph. List Invalid Names 13. 1940; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 58 & 87 (1942) and [ed. 2], 135 & 178. 1949; H.-T. Chang, Act. Phytotax. Sin. 1: 286. 1951; Moldenke, Résumé 174 & 445. 1959; Moldenke, Phytologia 14: 59 (1966), 14: 221, 226, & 228 (1967), 16: 365 (1968), and 21: 225 & 334. 1971.

P'ei's original description of this form (1932) is "A robust plant, leaves densely pubescent on both surfaces, obovate to ovate-elliptic, shortly acuminate, base cordate, 6.5 to 11 cm. long, 3 to 6 cm. wide. The densely pubescent petioles are short, not exceeding 0.8 cm. in length. The peduncles are 1.7 to 2 cm. in length, and densely pubescent. Kantung: Hainan, Five Finger Mt., McClure 9591!, May 1922, 'Shrub, 2 to 3 m. in height, flower white'; Hainan, Napong Mt., growing in ravines, Tak (Ts'ang) 850! Sept. 1927, 'Shrub, 5 feet, fruit white'; Hainan, Tsang, Tang, and Fung 154!, May 1929, 'Shrub, 1 m. in height, flowers violet'." Since he has designated no specific type, all his citations must be regarded as cotypes.

The plant has also been collected along streamsides and a vernacular name for it is "lo hai ngan". The form is obviously very similar to C. formosana Rolfe and I am not convinced that it is really a form of C. rubella. It was reduced by Chang (1951)to C. pedunculata R. Br., to which he also reduces C. formosana. Tsang [Tak] 850 was cited by me as C. formosana in Phytologia 14: 221 & 226 (1967) and F. A. McClure 3038 as C. formosana f. albiflora Yamamoto in Phytologia 14: 228. Material has also been misidentified and distributed in herbaria under the names C. giraldiana Hesse and C. macrophylla Vent.

In all, 6 herbarium specimens, all cotypes, have been examined by me.

Citations: CHINESE COASTAL ISLANDS: Hainan: F. A. McClure 3038 [Herb. Canton Chr. Coll. 9591] (Ca--366340--cotype, Ph--cotype); W. T. Tsang 850 [Herb. Lingnan Univ. 16349] (Ca--326102--cotype, N--cotype, W--1249840--cotype); Tsang, Tang, & Fung 154 [Herb. Lingnan Univ. 17685] (N--cotype).

CALLICARPA RUDIS S. Moore, Journ. Bot. Lond. 63: Suppl. 80. 1925.

Bibliography: S. Moore, Journ. Bot. Lond. 63: Suppl. 80. 1925; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 63 & 87. 1942; Moldenke, Alph. List Cit. 1: 207. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 143 & 178. 1949; Moldenke, Résumé 187 & 445. 1959.

The original description of this species by Moore (1925) is "Arbor? vel frutex?; ramulis tetragonis crebro ramosis furfuraceo-fulvo-tomentosis postea glabrescentibus; foliis petiolatis (prt. ± 1 cm. long.) ovatis obtusis basi obtusis nisi rotundatis margine repandis vel repando-denticulatis papyraceis pag. sup. glabris costisque impressis pag. inf. minute farinoso-tomentosis costisque (utrinque 6) costulisque uti reticulum eminentibus plerisque 6--10 x 4--4.5 cm.; cymis petiolis subaequilongis breviter pedunculatis plurifloris uti pedicelli circa 2 mm. long. et calyx et corolla farinoso-tomentosis; calyce truncato 1.5 mm. long.; corollae tubo calyce paullo longiori (2 mm. long.) lobis ovatis obtusis 1.5 mm. long.; antheris subinclusis fere 2 mm. long.; ovario farinoso-tomentoso; drupa depressa globosa 3 mm. diam. S.; Kotta Djawa, Lampongs, 300 ft. 1355c. The relatively short and broad almost entire leaves are a striking feature of the species."

My own observation, however, is that the leaf-blades are plainly dentate on some specimens of this plant. It is obviously closely related to C. erioclona Schau.

In all, 3 herbarium specimens of what is probably a part of the type collection, and 1 mounted photograph of C. rudis have been examined by me.

Citations: GREATER SUNDA ISLANDS: Sumatra: H. O. Forbes 1355a (N--isotype, N--isotype, N--photo of isotype, Vu--isotype).

CALLICARPA SACCATA Steen., Blumea 15: 147--149, fig. 2 a--j & l--o. 1967.

Bibliography: Van Steenis, Blumea 15: 147--149, fig. 2 a--j & l--o. 1967; Van Steenis, Biol. Abstr. 49: 4205. 1968; Moldenke, Résumé Suppl. 16: 12. 1968; Moldenke, Phytologia 20: 495 (1971) and 21: 39 & 40. 1971.

Illustrations: Van Steenis, Blumea 14: 148, fig. 2 a--j & l--o. 1967.

Van Steenis (1967) describes this species as follows: "Affinitate C. havilandii differt foliis ovato-oblongis, longe acuminatis, basi abrupte attenuatis, in saccas duas auriculiformis productis; flores tetrameri. Typus, Sarawak, Sibat ak. Luang S 23637 (L). — Fig. 2. A treelet 3--6 m; stems 3--7 1/2 cm Ø. Indument conspicuous, all over coarsely brown hispid by more-celled, more or less tubercle-based hairs, further a very short, puberulous tomentum consisting of simple and stellate hairs, sparsely on the leaf, densely and brownish on the stem and cymes; undersurface of the leaves besides with fairly dense regularly interspersed, fine, pitted glands, on the auricled lobes also large nectarial glands. Leaves ovate- to elliptic-oblong, apex long-acuminate, base rounded and ± abruptly narrowed, equal-sided or unequal-sided, widened into

two auriculiform, bullate sacs 1 — 1 1/2 cm long; margin shortly dentate; blade proper c. 10--17 by 5--11 cm, in some specimens markedly anisophyllous; petiole 1/2 — 1 1/2 cm. Cymes fairly many-flowered, axillary on the old wood, c. 2 — 2 1/2 cm long. Flowers 4-merous. Calyx outside densely and shortly brown stellate-hairy, inside sparsely stellate-hairy, hypanthium in flower thicker upwards; fruit calyx more distinctly cup-shaped with 4 minute teeth. Corolla tube twice as long as the 4 oblong blunt lobes, in total c. 7 1/2 mm long. Stamens not protruding, style slightly so. Ovary 4-celled, each cell with 2 dissepiment-attached ovules. Fruit almost globular, c. 4 mm Ø, with scattered, yellow, pulverulent glands (as on the ovary), breaking up into 8 segmental pyrenes; pericarp withering; each pyrene containing a small seed without endosperm and with 2 cotyledons in a small outer cavity; besides all pyrenes with an inner empty, air-filled cavity, obviously capable of floating."

The type of this curious species was collected on a hillslope at Bt Iju, Ulu Arip, Balingian, at an altitude of 60 meters, Sarawak (Sarawak Herb. 23637), and is deposited in the herbarium of the Rijksherbarium at Leiden. Van Steenis (1967) cites also Ashton S.18286, Hirano & Motta 1118, E. Wright S.23866, and Sarawak Herb. 23773 & 23728, all from Sarawak. He comments "From the lowland to c. 450 m, on hill slopes, land slips along river, clayey or sandy-clay soils. Ashton noted of his specimens that branches are weak and sagging to the ground. The fruit is red or bright red, petals, stamens, and style white; all parts covered with rusty hairs." He also remarks that "The species makes part of an assemblage of rusty-rough-haired species of Borneo and the Philippines. Its most remarkable feature is the sac-like auricles at the base of the blade, reminding exactly of those of some tropical American Melastomataceae belonging to the group of genera Tococa, Myrmedone, Maieta, Microphysca, and Calophysa, which have a similar formicarium. Of course, some other plants have glandular auricles, as Adenia, but these are much smaller and not ant-inhabited, like in ours. Thus it represents another example of convergence among formicaria (compare Beccari, Malesia 2: 234). In looking up some literature on the American genera mentioned above I found that Gleason (in Pulle, Fl. Surin. 3, 1935, 235) remarked that in Tococa guianensis 'formicaria are sometimes absent'; whether he means from some specimens or only occasionally from some leaves is not quite clear. Anyway, in this new Callicarpa all leaves possess these unique sacs. It is remarkable that the cauliflorous inflorescences (only collected by Ashton) differ markedly in structure from the axillary ones. This is also found in C. involucrata.....; they are hardly branched fascicles on knobs.....Affinity. Doubtless allied to C. havilandii (K. & G.) H. J. Lam, C. superposita Merr., C. barbata Ridl., C. fulvohirsuta Merr., all of Borneo; but the affinity affects also some Philippine species. The present occasion shows the need of a thorough revision of this group."

The species is known to me only from the literature. It should be noted here, however, that if Van Steenis is correct in assigning this plant to the genus Callicarpa, it will be the first known species in the genus to have two ovules per ovary-cell and 8 seeds in the 8-segmented pyrenes.

CALLICARPA SALVIAEFOLIA Griff., Itin. Notes [Posthum. Papers 2:] 94 [as "salviae folia"]. 1848.

Synonymy: Callicarpa salvifolia Griff., Itin. Notes [Posthum. Papers 2:] 406, nom. subnud. 1848. Callicarpa salviifolia Griff. apud A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933.

Bibliography: Griff., Itin. Notes [Posthum. Papers 2:] 94 & 406. 1848; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Razi, Rec. Bot. Surv. India 18: 9. 1959; Moldenke, Résumé Suppl. 4: 7 & 11. 1962.

The original description of this taxon by Griffith (1848) is merely "1390. Frutex humilis ramosus baccis albis. Hazoo." Hill (1933) states that it is native to Khasia, India. Razi (1959) cites it as "ASSAM: Khasias" and claims that it is mentioned in Journ. Bot. Lond. 63: 406 (1925), but I fail to find it there; in fact, the pages do not go that high in that volume. Nothing is known to me of this taxon except what is said of it in the literature listed above.

CALLICARPA SELLEANA Urb. & Ekm. ex Urb., Arkiv Bot. 22A (17): 108. 1929.

Bibliography: Urb., Arkiv Bot 22A (17): 108. 1929; A. W. Hill, Ind. Kew. Suppl. 8: 37. 1933; Moldenke in Fedde, Repert. Sp. Nov. 39: 303 (1936) and 40: 49--51, 53, 120, & 123. 1936; Moldenke, Geogr. Distrib. Avicenn. 7. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 26 & 87. 1942; Moldenke, Alph. List Cit. 1: 185 & 188 (1946) and 4: 1062 & 1066. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 47 & 178. 1949; Moldenke, Résumé 56 & 445. 1959; Moldenke, Phytologia 14: 150. 1966; J. A. Clark, Card Ind. Gen. Sp. Pl. n.d.

In all, 7 herbarium specimens of C. selleana, including the type, and 4 mounted photographs have been examined by me.

Additional & emended citations: HISPANIOLA: Haiti: Ekman H. 1584 (I--photo of type, W--1411861--isotype, W--1479490--isotype), H.7995 (Mi--photo).

CALLICARPA SHAFERI Britton & P. Wils. in N. L. Britton, Mem. Torrey Bot. Club 16: 96--97. 1920.

Bibliography: N. L. Britton, Mem. Torrey Bot. Club 16: 96--97. 1920; J. A. Clark, Card Ind. Gen. Sp. Pl. 1920; A. W. Hill, Ind. Kew. Suppl. 6: 34. 1926; Moldenke in Fedde, Repert. Sp. Nov. 39: 300 (1936) and 40: 70--73, 119, 121--123, 125, & 129. 1936; Moldenke, Geogr. Distrib. Avicenn. 5. 1939; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 24 & 87. 1942; Moldenke, Alph. List Cit. 1: 11, 66, 186, 187, 221, & 316. 1946; H. N. & A. L. Molden-

ke, Pl. Life 2: 83. 1948; Moldenke, Alph. List Cit. 2: 424 & 486 (1948), 3: 867 & 928--930 (1949), and 4: 1038 & 1043. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 43, 45, & 178. 1949; Alain in León & Alain, Fl. Cuba 4: 304 & 306. 1957; Moldenke, Résumé 50, 53, & 445. 1959; Moldenke, Phytologia 14: 154 (1966) and 21: 333. 1971.

Recent collectors have found this plant growing near brooks, flowering and fruiting in August. The Acuña & Roig 16765, distributed as C. shaferi, is actually the type collection of C. cubensis var. parviflora Moldenke. Cuesta 1017 and Ekman 11909 & 17930, previously cited by me as anomalous C. shaferi, are also now better placed in C. cubensis var. parviflora.

In all, 16 herbarium specimens of C. shaferi, including the type, and 10 mounted photographs has been examined by me.

Additional & emended citations: CUBA: Pinar del Río: Shafer 333 (I--photo), 13526 (E--862661--isotype, F--493059--isotype, Mi--photo of isotype, W--1047863--isotype), 13532 (F--493060, W--1047864); Shafer & León 13526 [Shafer 3213] (Ha--isotype), 13532 [Shafer 3214] (Ha). ISLA DE PINOS: Britton & Wilson 14845 (F--459797, W--793478).

CALLICARPA SHIKOKIANA Mak., Bot. Mag. Tokyo 6: 54, hyponym (1892) and 18: 46--47. 1904.

Bibliography: Mak., Bot. Mag. Tokyo 6: 54. 1892; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 1, 73. 1901; Mak., Bot. Mag. Tokyo 18: 46--47 (1904) and 24: 28. 1910; C. K. Schneid., Ill. Handb. Laubholzk. 593. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; Koidz., Bot. Mag. Tokyo 39: 8. 1925; Nakai in Nakai & Koidz., Trees & Shrubs Indig. Jap., ed. 2, 1: 461. 1927; Nakai in Shirasawa, Icon. Essenc. Forest. Jap. 2: [Terasaki, Zoku Nipp. Syokubutzuhu] fig. 2484. 1938; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 2, 73. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 58 & 87. 1942; Hara, Enum. Sperm. Jap. 1: 185. 1948; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 134 & 178. 1949; Hatus., Journ. Jap. Bot. 26: 372. 1951; Moldenke, Phytologia 5: 100. 1954; Masamune, Sci. Rep. Kanazawa Univ. 4: 47. 1955; Durand & Jacks., Ind. Kew. Suppl. 1, pr. 3, 73. 1959; Moldenke, Résumé 172, 248, & 445. 1959; Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Jap. 219. 1960; Ohwi, Fl. Jap. 764. 1965; Moldenke, Phytologia 14: 162 (1966) and 21: 380. 1971.

Illustrations: Nakai in Shirasawa, Icon. Essenc. Forest. Jap. 2: [Terasaki, Zoku Nipp. Syokubutzuhu] fig. 2484. 1938.

In his original publication of this binomial Makino (1892) said merely "sp. nov. Tosamurasaki. Tosa: Iburi, Mt. Imano (T. Makino)". Since the name can be associated with a specimen, it is thus not a true nomen nudum but is what is called a hyponym in the original definition of that term. Makino validated the name in 1904 by means of the following description: "A small tree; branchlets slender, pulvereo-pubescent with curved short minute hairs, mixed with min-

ute granular glands. Leaves opposite, shortly petiolate, elliptical-lanceolate, caudately long-acuminate, attenuately cuneate toward the base, coarsely dentate with acute deltoid or depressed-deltoid teeth or obtuse ovato-deltoid teeth excepting the upper and lower portions which are entire, 4—13 cm. long, 2—4 cm. broad, membranaceous, thinly disparsed with pubescent hairs and minute granular glands on both surfaces, and hairs denser on the midrib and lateral veins; midrib prominent beneath; lateral veins 5—6 on each side, ascending, reaching the teeth; petiole pubescent, 5—8 mm. long. Cyme supra-axillary, rather densely many-flowered, peduncled, shorter than leaves but much exceeding the petiole, divaricately branched, 2 — 3 1/2 cm. across; peduncle erect-patent or patent or slightly reflexed, 12—18 mm. long, straight, pubescent and covered with minute granular glands as are branches of the cyme; bracts minute, linear or lato-linear, thinly pubescent externally. Flowers small, 3 mm. across, white, shortly pedicellate, disparsed with minute granular glands. Calyx 1 mm. long, broadly obconico-campanulate, 4-nerved, shallowly 4-toothed, teeth depressed-deltoid, acutish. Corolla exceeding the calyx, shortly campanulate-infundibuliform, 4-lobed, about 2.5 mm. long; lobes patent, orbicular, shorter than the tube. Stamens 4, much exserted; filament filiform, glabrous, 4 mm. long; anther elliptical, 2-auriculate at the base, with granular glands on the back. Style filiform, glabrous, scarcely longer than the stamen; stigma shortly obconical and truncate. Ovary minute, included within the calyx, globose, with granular glands. Berry numerous, 2 mm. across, purple. Flowers on July—August. Hab. Prov. Tosa: Iburi (T. Makino! Oct. 25, 1885), Mt. Imano in Hata-gōri (T. Makino! Aug. 7, 1889)."

Callicarpa yakusimensis Koidz. is given as a synonym of C. shikokiana by Hatusima (1951) and Ohwi (1965), but I regard Koidzumi's name as belonging in the synonymy of C. japonica var. luxurians Rehd. Schneider (1911), in his discussion of what is now called C. dichotoma (Lour.) K. Koch, says "Hier scheint sich C. Shikokiana Mak.....aus Japan, prov. Tosa, anzuschliessen, die auch nur 5—8 mm lange B[latt]-Stiehle hat, in den B[lättern] und sonst aber sich mehr C. japonica zu nähern scheint."

Material of C. shikokiana has been misidentified and distributed in herbaria under the name C. yakushimensis Koidz. On the other hand, the E. H. Wilson 6050, distributed as C. shikokiana, is actually C. oshimensis Hayata.

In all, 2 herbarium specimens of C. shikokiana have been examined by me.

Citations: KYUKYO ISLAND ARCHIPELAGO: Yakushima: G. Masamune s.n. [Yakusima, Aug. '37] (N); Tagawa & Motozi 1847 (Ws).

xCALLICARPA SHIRASAWANA Mak., Bot. Mag. Tokyo 24: 28—29. 1910.

Synonymy: Callicarpa shirasawana Mak. ex C. K. Schneid., Illustr. Handb. Laubholzk. 591. 1911. Callicarpa mollis x japonica

Schneid., Illustr. Handb. Laubholzk. 591. 1911. Callicarpa mollis Shirasawa ex Nakai, Journ. Jap. Bot. 14: 641, in syn. 1938 [not C. mollis Koord., 1966, nor Matsumura, 1922, nor Req., 1839, nor Sieb. & Zucc., 1844, nor Willd., 1840]. Callicarpa japonica x mollis Rehd., Man. Cult. Trees, ed. 2, pr. 1, 804, in syn. 1940. Callicarpa japonica Thunb. x C. mollis Sieb. & Zucc. ex Hara, Enum. Sperm. Jap. 1: 185, in syn. 1948. Callicarpa japonica x mollis Mak. ex Rehd., Bibl. Cult. Trees 584, in syn. 1949. Callicarpa mollis "sensu Shirasawa" apud Rehd., Bibl. Cult. Trees 584, in syn. 1949. Callicarpa x shirasawana Mak. ex Li, Morris Arb. Bull. 14: 7. 1963.

Bibliography: Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] pl. 14 [Tafel 10], fig. 8. 1895; Shirasawa, Nippon Shinrin Jumoku Dzufu [Icon. Essenc. Forest. Jap.] 2: pl. 70, fig. 20—27. 1908; Mak., Bot. Mag. Tokyo 24: 28—29. 1910; C. K. Schneid., Illustr. Handb. Laubholzk. 591. 1911; J. Matsum., Ind. Pl. Jap. 2 (2): 530. 1912; Prain, Ind. Kew. Suppl. 4, pr. 1, 34. 1913; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 24. 1921; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 1: 462, fig. 219. 1927; Moldenke in Fedde, Repert, Sp. Nov. 40: 86 & 115. 1936; Nakai, Journ. Jap. Bot. 14: 641. 1938; Rehd., Man. Cult. Trees, ed. 2, pr. 1, 804 & 932. 1940; Moldenke, Prelim. Alph. List Invalid Names 12 & 13. 1940; Worsdell, Ind. Lond. Suppl. 1: 160. 1941; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 1], 71 & 87. 1942; T. H. Everett, Cat. Hardy Trees & Shrubs 16. 1942; Moldenke, Alph. List Invalid Names 10 & 11. 1942; Hara, Enum. Sperm. Jap. 1: 185. 1948; H. N. & A. L. Moldenke, Pl. Life 2: 83. 1948; Rehd., Bibl. Cult. Trees 584. 1949; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 157 & 178. 1949; Moldenke, Phytologia 3: 380. 1950; W. J. Bean in Chittenden, Roy. Hort. Soc. Dict. Gard. 1: 358 & 359. 1951; Prain, Ind. Kew. Suppl. 4, pr. 2, 34. 1958; Moldenke, Am. Midl. Nat. 59: 335. 1958; Moldenke, Résumé 171, 214, 244, 245, & 445. 1959; Krüssmann, Handb. Laubgeh. 1: 253 & 255. 1959; Rehd., Man. Cult. Trees, ed. 2, pr. 9, 804 & 932. 1960; Kitamura & Okamoto, Col. Illustr. Trees & Shrubs Jap. 220. 1960; Li, Morris Arb. Bull. 14: 7. 1963; Ohwi, Fl. Jap. 764 & 998. 1965; Moldenke, Phytologia 13: 431 & 433 (1966), 14: 142 (1966), 14: 254 (1967), 15: 30 & 34 (1967), and 21: 43, 240, & 382. 1971.

Illustrations: Shirasawa, Bull. Coll. Agr. Tokyo Imp. Univ. 2: [Jap. Laubh. Winterzust.] pl. 14 [Tafel 10], fig. 8 [as "C. mollis"]. 1895; Shirasawa, Nippon Shinrin Jumoku Dzufu [Icon. Essenc. Forest. Jap.] 2: pl. 70, fig. 20—27 [as "C. mollis"] (in color). 1908; Nakai, Trees & Shrubs Indig. Jap., ed. 2, 1: 462, fig. 219. 1927.

Makino's original (1910) description of this plant is as follows: "A small deciduous shrub, ramose; branches terete, umber; branchlets erect-patent, rather thinly (but denser towards the top) adpressedly covered with stellate hairs; bud densely covered with

stellate hairs. Leaves petiolate, opposite, obovato-lanceolate, obovato-oblong, elliptical, but often ovato-elliptical in the inferior ones, abruptly caudato-acuminate at the apex, acute or obtuse at the base, serrate, chartaceous, shortly thin-puberulent and minutely thin-granulato-glandular above, sparingly stellato-hairy and minutely granulato-glandular beneath, 2 1/2 — 11 cm. long, 1 1/2 — 3 3/4 cm. broad; midrib prominent beneath; veins about 5—8 on each side, erect-patent, somewhat arcuate upwards; veinlets finely reticulated beneath; petiole rather thinly covered with stellate hairs, 4—11 mm. long. Cymes axillary, small, much shorter than the leaves but exceeding the petiole, many and densely flowered, peduncled; peduncle strict, usually longer than the petiole, densely or thinly covered with stellate hairs, attaining about 10 mm. long in flower; branches and pedicels short, thinly covered with simple forked and stellate patent hairs; bracts minute, linear, obtuse, ciliated, deciduous, very rarey leafy and about 1 cm. long; bracteoles usually shorter than the pedicels. Flowers small, lilac; pedicel shorter than the flower. Calyx short-campanulate, 4-fid with obtuse sinuses, viridescent, thinly pubescent and ciliated with simple forked and stellate patent hairs, dispersed with minute granular glands, about 2 mm. long in flower, persistent and slightly enlarged in fruit; lobes deltoid, subobtuse. Corolla exserted, scarcely longer than twice of the calyx, dispersed with minute granular glands externally; limb patent, 4-fid; lobes orbicular; tube campanulate, longer than the limb. Stamens 4, exserted, erect, inserted at the base of the corolla-tube; anther rather large, lato-oblong, bifid at the base, nearly 2 mm. long, covered with minute granular glands towards the connective on both sides; filaments filiform, glabrous. Style erect, exceeding the stamens in height, filiform, gradually enlarged above, glabrous; stigma thickish, obliquely truncate; ovary globular. Fruit violet, globose, smooth, 4—6 mm. across, more or less exceeding the persistent hirtello-pubescent calyx; pyrenae oblong, compressed, hardly curved, smooth, stramineous, about 3 mm. long. Nom. Jap. Inumurasakishikibus (nov.) Hab. Prov. Musashi: Tokyo Bot. Gard. Koishikawa, cult. (T. Makino! June 13, and July 26, 1895, Dec. 1909).

"Probably a hybrid between Callicarpa japonica Thunb. and C. mollis Sieb. et Zucc., and the plant in the Botanic Garden of the University of Tokyo is the only living specimen hitherto known. It differs from C. japonica Thunb., which has the thinner and glabrescent leaves and shallowly lobed calyx; and from C. mollis Sieb. et Zucc., which bears the more densely hairy leaves, more deeply lobed and more hairy calyx, larger flower, and fewer-flowered cyme."

Nakai (1938) adds "This plant is an hybrid between Callicarpa japonica and Callicarpa mollis with the characters of the former more predominated. The Korean specimens bear the leaves like those of Callicarpa japonica f. rhombifolia". He cites Nakai

12078 from Kaitô Island, Korea. Li (1963) says of the hybrid "It occurs naturally around Tokyo (Nakai 1922). It has elliptic to ovate-lanceolate or ovate-oblong leaves which are serrate along the margins and sparingly fasciculate-pubescent and glandular beneath. The calyx is distinctly lobed and the flowers lilac in color. A small plant of this hybrid is represented in the Morris Arboretum collection."

Schneider (1911) says "Nach Makino.....hat Shirasawa keine typische mollis abgebildet, sondern wahrscheinlich eine mollis x japonica, die Makino als C. Shirasawana beschreibt. Doch sind die Bl[ätter]-Unterschiede gegen mollis gering, diese ist noch reicher beh[aart] und der K[elch] noch tiefer geteilt."

In my 1936 work I followed Bakhuizen van den Brink (1921) and reduced xC. shirasawana to synonymy under typical C. japonica Thunb. because specimens seen by me up to that time so labeled in herbaria and taken from horticultural material seemed indistinguishable from typical C. japonica. Apparently these specimens were misidentifications.

It should be noted here that the C. mollis accredited to Koorders in the synonymy given above is actually a synonym of C. caudata Maxim., that of Matsumura is C. oshimensis var. okinawensis (Nakai) Hatus., that of Requien and of Willdenow is C. acuminata H.B.K., and that of Siebold & Zuccarini is a valid species.

The hybrid has been found in the wild state -- contrary to Makino's statement — at 300 meters altitude, flowering in June, and the common names "inu-murasaki" and "inu-murasakisikibu" are recorded for it, in addition to the variant listed by Makino. Bean (1951) states that it was introduced into the horticultural trade in 1895, but on what he bases this statement is not clear.

The W. R. Sykes 4/65, distributed as xC. shirasawana, is actually only C. japonica Thunb.

Thus far only a single herbarium specimen undoubtedly representing this hybrid has been seen by me.

Citations: JAPAN: Honshu: Murata 16421 (W--2909694).

CALLICARPA SIMONDII Dop, Bull. Soc. Hist. Nat. Toulouse 64: 506—507. 1932.

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The original description of this plant by Dop (1932) is "Frutex? Ramuli subquadrangulares tomento denso farinoso stellato obtecti. Folia membranacea, elliptica vel paullo elliptico-obovata, basi obtusa interdum acuta, abrupte et breviter acuminata, regulariter et tenuiter denticulata praeter basim....." [to be continued]